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Guest Editorial

The Medical Care Distribution Problem

ONE of the most stimulating and encouraging phases of our work in New Jersey is the constantly increasing demand from other State Societies for information and advice based upon our experience in developing the medical care distribution program of The Medical Society of New Jersey.

Every day there is an increase in the number of physicians who realize that organized medicine must overcome its defensive, defeatist attitude and adopt a sincere, constructive attitude looking toward a solution of this important problem. The majority of physicians who have given the problem serious thought believe that voluntary medical service plans offer the most practical approach to its solution.

In whatever direction we turn, we meet with the demand for improvement in medical care distribution by some means which will not incur financial hardship to persons of modest income or deter them from seeking adequate medical care because of costs. We can no longer say that this demand comes from starry eyed idealists. It comes from industry, labor, public opinion and from socio-political trends.

Numerous public opinion surveys conducted on a national basis and on a state basis by organizations whose reputations are above reproach, indicate that the people want this problem solved and that the majority are willing to have it solved through a national compulsory sickness insurance plan if the medical profession does not find a solution for it.

Members of our own profession occupying important and influential positions in government have warned us. Dr. Parran, Surgeon General of U.S.P.H.S., at a meeting in Kansas City about a year ago was asked, "Do you favor socialized medicine?" His answer was "No, but I ask you as doctors—what is YOUR program?" I have heard the Honorable Walter Judd, Congressman from Minnesota, speak on two occasions, once in Chicago and once before our own House of Delegates. Dr. Judd is a very highly respected physician in Minnesota and he told us "The Wagner-Murray-Dingell Bill will not pass in its present form, BUT THIS IS YOUR LAST CHANCE!"

We have been adequately warned and should recognize these warnings.

Let us assume then that we all admit the existence of this problem, that its solution is a moral obligation of the profession and that we are willing and sincerely anxious to find a solution for it.

In our approach it becomes obvious that it is an economic problem and that in its solution we must break down the economic barrier which frequently exists between the patient and the physician.

We will next concede that the problem of the indigent and the medically indigent is a combined responsibility of government and the profession and that the cost of medical care for this group will be payable by tax money. This seems non-controversial within the medical profession.

Next, we will agree that the problem of the employed, self-supporting person and his family is a responsibility of the individual, who must, in accordance with established traditional principles of American democracy, arrange to provide for himself and his family. This should be non-controversial. From here on the problem of the self-supporting group becomes controversial within the profession.

I am convinced, and I think you will admit, that many self-supporting families of low or modest income are unable to pay for the medical care necessary in unpredictable catastrophic illnesses and that many of them deny themselves adequate medical care because of costs. For this reason public opinion demands that any arrangement to provide medical care for this group be on a service basis.

I see no reason why the medical profession should enter the field of indemnity insurance. Lay insurance companies with their years of experience are best able to provide this type of insurance. It has been available for many years. It has never solved the problem and never will. It provides indemnity on the basis of technical procedures rather than on the basis of the amount of professional service which may be necessary in the adequate care of a disease which will vary in accordance with type and severity of the disease and its effect upon the individual. It does not meet the needs of our people nor does it satisfy our critics.

To make our contribution effective we must have unity within the profession. We have the support of the majority, but there are groups of skeptics who must be educated and convinced, and there are some cynics who will agree to nothing and who are usually guided by selfish motives. If every individual physician insists upon a Plan which meets his entire personal approval, then each of these physicians will be disappointed, and the Plan will fail.

Physicians and the medical profession have always been shown deference and granted many privileges. We determine who shall study medicine, the type of education they shall receive, and which physicians are to practice in our respective States under medical practice laws enacted upon our recommendations. These are privileges, and every privilege is paralleled by an obligation and responsibility. These obligations of ours cannot be enforced by the provision of any civil law. They are moral obligations to be fulfilled according to moral laws, a high moral code and high standards of ethics.

The dilemma in which medicine finds itself today is due largely to socio-economic conditions over which we have no control, but aggravated by the activities of those physicians who place their own financial welfare above the welfare of the patient, and whose method of practice is not in accordance with moral law. We cannot expect and should not encourage this minority group to participate with us in the solution of this problem, but we must have the united support of the remaining majority.

One defect of organized medicine is the failure of the average physician to interest himself sufficiently in the administrative affairs of medicine. This has resulted in the promotion of lay control of the profession and instances of leadership engineered by politically-minded minority groups of physicians and laymen. True leadership can be accomplished only by the democratic process of election within the profession. This type of leadership must first be established at a state level and acknowledged by the rank and file of the profession. Only then can we expect the election of proper leaders

at a national level and proper national policies. Who are these leaders among the 180,000 physicians of this country, upon whom will fall the responsibility of guiding the affairs of medicine during these next critical years? I would say they are the elected officers and councils of our County and State Societies and their representatives in the House of Delegates of the American Medical Association. Upon those of you who have been elected to these offices will fall the responsibility of studying this problem, and of acting as the spark plugs in promoting its solution.

Under such leadership, with the profession making a sincere effort to fulfill its moral obligations, I believe there will be little chance of our opponents convincing our Congress of the necessity for a nation-wide sickness insurance plan. If we fail to make a sustained sincere effort, then we must realize that the sworn duty of our elected representatives in government requires that they take whatever action they deem necessary for the welfare of our people.

Leadership and policies having been established, the problem becomes largely administrative and its administration must be directed and controlled by the profession if we are to assure the future independence of the profession.

In organizing and operating a Plan there will be need of assistance from some organization experienced in the field of insurance. I hope this will be your Blue Cross Hospital Plan. Any agreement with a Blue Cross Plan must be flexible and be interpreted liberally enough to meet with many unpredictable contingencies which will arise. Before making any agreement, the officers of each Plan should have faith in the integrity and fairness of the officers of the other Plan, and each Plan must have a sympathetic understanding of the problems of the other. If this does not exist there should be no agreement. Under the agreement the Medical Plan should retain its corporate identity. Each Plan should have a definitely defined scope of function and the Hospital Plan should be granted no authority over physicians, the relationship between the Medical Plan and physicians or the relationship between the physician and patient. It should be an administrative agreement only, and not interfere with the Medical Plan's privilege of determining policies.

In organizing and operating a Medical Plan, any spirit of false altruism you may entertain will soon be dispelled as you realize that you must have money in the bank to pay for the services rendered. Medicine must not attack this problem with its fingers crossed. If we do, it may bounce back and push us one step closer to compulsory sickness insurance. There must be adequate income to support reasonable fees. The Plan must be built within the present framework of medical practice, provide free choice of physician and patient, free enterprise and personal initiative of the physician, maintain high standards of care and provide adequate income to the profession.

A discussion of our Plans in New Jersey for the indigent and medically indigent is not within the scope of this paper. In presenting Medical-Surgical Plan we do not want to appear dogmatic, or as inferring that we have the right answers, or that the solution of our problem is adaptable to the local problem in Virginia. The statistical material we present has been of advantage to us in guiding and following our progress to date but is not necessarily a barometer indicating our future experience as altered by changing underwriting policies or by mistakes, or by uncontrollable changes occurring during the coming reconversion in industry or the effect on our maternity and general experience by the return of 10 million men now in military service.

Medical-Surgical Plan has been in operation for 27 months. It provides benefits toward payment for medical, surgical, obstetrical, consulting, anesthesia services and

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the services of a surgical assistant rendered in hospital. We include benefits for medical care because we feel that adequate care is not possible without it. It is a new phase of sickness insurance and our experience should be of value to any group contemplating a new Plan. The total cost of medical is less than we anticipated.

The subscription rate is 75 cents per month for the single person contract and $2.00 per month for the family contract including all children under 18 years of age. Our 2,900 Participating Physicians deem as payment in full the amount payable by the Plan for services rendered in hospital to patients admitted for semi-private or ward hospital accommodations. Payments for services rendered patients admitted for private room accommodations are considered indemnity against the physician's regular fee and the patient is liable for any balance. Hospital Service Plan of New Jersey distributes our contracts, does our billing and collections and general accounting. For this service we pay them 12 per cent of our monthly earned income. The Plan is self-supporting, has paid all claims and operating expenses from its earned income and accumulated modest reserves. Fees are exemplified by: medical, $5.00 for initial visit and $3.00 for subsequent daily visit; surgical, appendectomy $100, complete hysterectomy $150, inguinal hernia repair $75.00, consultations $10.00 and other fees consistent with these examples.

Income per person is the basic income unit, particularly important if family contracts are to include all eligible dependents regardless of number. Our income per person has remained constant at $0.67 cents per month. It is the yield obtainable by our subscription rate in New Jersey where the average family of 3.8 persons is buffered in the Plan by an enrollment containing 42 per cent of single contracts. It might not apply in your Plan because of differences in the size of the average family, different underwriting policies and difference in the percentage of single persons in industry.

The second, and most important factor, is the percentage of persons enrolled in each group. In groups with enrollments of 30 per cent of employees our claim costs have been 67 per cent of income from the groups, while in groups with 75 per cent enrollment the cost has been 44 per cent of income. Claim costs rise as our groups become eligible for tonsillectomies and obstetrical care. The higher the percentage of enrollment the more favorable is the cross section of health in the group.

The hospital admission rate to general hospitals among the general population of New Jersey is 77 per thousand per year. Our admission rate from January to July 1944 was 86. In July it was 104 and in August 113 due to large number of tonsillectomies and elective gynecology during the school vacation period. (In September with the opening of schools the rate fell to 79.) The difference between this normal rate and our rate is due to the admission to hospital from among our subscribers of many persons who would not otherwise have entered hospital for treatment because of costs. We are improving medical care distribution and are developing a new source of income for the profession.

The number of patients cared for in semi-private rooms is important to us as our Participating Physicians accept as complete payment the amount payable by the Plan for their care. This basis of payment has caused some difficulties and will be changed in our new contract effective November 1st to an income-level basis. (Complete care will be provided single persons with incomes of $2,000 or less, husband and wife with incomes of $2,500 or less, families with incomes of $3,000 or less. Above these incomes the Participating Physician will charge his regular fee and credit the schedule toward the bill, looking to the patient for the balance, if any.)

OPERATING COSTS

Your operating costs will depend to a large extent upon your agreement with your Blue Cross Plan. Whatever the actual cost will be for their services, it will be less than it would cost you otherwise to duplicate their services. Costs will decline as you increase your enrollment. It should eventually be no more than the cost of operating the Blue Cross Plan. During our first 6 months of operation our operating costs totalled 51.2 per cent of our earned income, of which we assumed 39.2 per cent and paid the Hospital Plan 12 per cent. During the year 1943 this total was reduced to 23.9. For the six months of 1944 it has totalled 19 per cent and in July 1944 was 17.7 per cent. We have paid all of our own expenses and the $5,000 donated by the Society for this purpose remains intact.

INCOME TO THE PROFESSION

Assuming the population of New Jersey was enrolled as under Wagner Bill Plan and 4,500 physicians in practice.

Population	Monthly Income per person	Monthly Income of Plan	Per Physician per month	Per Physician per year
4 million	$ 0.67	$ 2,680,000	$ 595.00	$ 7,140.00 (less administrative costs)

This income, for services rendered in hospitals only, may be compared to the estimated income of $5,000 per year per physician for home, office and hospital service under a Wagner Bill Plan.

At present we must think in terms of overall income to the profession and cannot guarantee adequate fees for service. Fee for service depends upon the relationship between the size of the clinical load to be paid for and the income of the Plan. Fees will improve as the clinical load decreases from correction of pre-existing defects in the groups.

Our total payment in fees equals 80 per cent of the total amount billed to us at the regular fee of the physician. This compares favorably with the collection rate of physicians during normal economic periods.

In conclusion: We believe our experience indicates that the medical care needs of employed, self-supporting persons in New Jersey can be met on a voluntary, pre-payment insurance basis; providing the medical profession and the people are willing to attack the problem on the basis outlined in this paper.

NORMAN M. SCOTT, M.D.,
Newark, New Jersey.

EDITOR'S NOTE: Dr. Scott is Medical Director of the Medical Service Administration of New Jersey.

FURTHER INVESTIGATIONS IN THE TREATMENT OF VITILIGO

BENJAMIN F. SIEVE, M.D.,
Junior Visiting Physician, Boston City Hospital; Instructor in Medicine,
Tufts College Medical School,
Boston, Massachusetts.

Vitiligo has baffled dermatologists because of its obscure etiology and ineffective treatment. Research concerning the physiology of melanin metabolism has yielded many hypotheses as regards vitiligo, none of which appear to have adequately helped in their clinical application. The purpose of the present communication is to summarize briefly the literature dealing with therapy of vitiligo for the past fifteen years; to describe a new therapeutic approach with vitamins and hormones; to discuss the clinical data of 48 patients who responded favorably to this treatment; and to report 5 cases briefly, each of which represents a different type. All 48 patients had acquired vitiligo, associated with avitaminosis and endocrine imbalance. In almost every case inadequate diet was found in association with the endocrine dyscrasia. The synergistic reaction of these two clinical entities forms the basis of this therapeutic approach. Para-aminobenzoic acid and its monoethanolamine derivative* were the principal therapeutic agents used in this series of cases. Hormone treatment varied with the specific endocrine disturbance.

Review of the Literature.—Hundreds of experimental and clinical reports have been published in the past fifteen years. Many papers record single or small groups of cases that corroborate or disprove newly suggested therapy. Berthold[1] presented a review of the literature on vitiligo up to 1929. Meirowsky,[2] in 1940, discussed the experimental data on melanin metabolism for the previous hundred years. For the present communication the review of the literature has been restricted to the publications which deal primarily with the treatment of vitiligo.

This treatment has been approached from both the internal and local point of view. Specifically this includes Buchki-dana,[3] antisyphilitic treatment,[4-8] injections of sodium cacodylate,[9] oil of bergamot,[10] psoralia corylifolia,[11-13] silver,[14] iron,[15] injections of bismuth,[16] skin grafts,[17] copper,[18] light therapy alone,[19-25] and light therapy combined with local applications or injections.[26-36]

The absence of free hydrochloric acid in the stomach was considered by Francis,[37] from personal experience, to be a primary etiological factor. He had vitiligo accompanied by achlorhydria for many years. After taking hydrochloric acid in 15 c.c. doses at each meal for two years, Francis noted that the vitiligo areas had completely disappeared. He used this therapy on three patients, obtaining similar results. A possible explanation of Francis' results may be the favorable action of the hydrochloric acid on the synthesis and absorption of some factors of the vitamin B complex present in the ingested food.

In recent years gold therapy[38-42] has been employed rather extensively. Intradermal or intravenous injections of gold sodium thiosulfate, in some cases combined with local application of oil of bergamot, or with exposure to ultraviolet irradiation, have been reported to partially restore the pigment in many cases. Other authors[1, 6, 8, 43-66] have suggested the use of endocrine replacement therapy, because of the associated glandular deficiency in vitiligo.

In 1931 Trim and Sequeira[67] reported a case which could be considered as a forerunner to vitamin therapy of vitiligo. A negro, hospitalized for sixteen weeks for treatment of a fracture, was observed to have patches of vitiligo on the face which became repigmented, although no specific therapy had been instituted. The authors attributed the beneficial effect to three possible factors: rest in bed, absence of direct sunlight, and stressed better food. Later, the relationship between vitamin C and pigmentation was suggested by Cornbleet[68] and Riehl.[69] Only a year ago, the use of vitamin C in large doses, and the correction of endocrine and metabolic disorders, as well as the routine therapy with gold and local applications, was recommended by competent authorities.[70] The effect of para-aminobenzoic acid and other factors of the vitamin B complex in combination with hormone therapy in cases of faulty pigmentation, including vitiligo, has

*Material for this investigation was generously supplied by Drs. Samuel Gordon and Nathan Weiner of the Endo Products Co., New York. Nigenol is the trade name employed by Endo Products.

already been mentioned.[71] Costello,[72] in February, 1943, reported the beneficial influence of the daily administration of 100 mg. of para-aminobenzoic acid in a case of vitiligo of the eyelids in a two year old child. In discussing this case Wolf[72] and Peck[72] mentioned the use of para-aminobenzoic acid in the treatment of vitiligo. Wolf observed change in pigmentation, but it was a further loss of color in the areas of vitiligo after two months' medication, while Peck did not comment on the effect of the drug on vitiligo, mentioning merely that no chromotrichial action was observed after eight months of treatment. With these exceptions, the literature makes no specific reference to the use of para-aminobenzoic acid in the treatment of vitiligo, although many authors have reviewed the role of vitamins in dermatology, and their influence on pigmentation.

Para-Aminobenzoic Acid.—In previous publications[71, 73] the clinical effect of para-aminobenzoic acid on pigmentation has been described. The effectiveness of this drug in human achromotrichia, as first published by the author,[73] has been corroborated by DeVilbiss[74] and Friedgood.[75] More recently Brandaleone *et al*[76] have confirmed the chromotrichial action of para-aminobenzoic acid as observed in 2 of 7 patients who received para-aminobenzoic acid in combination with calcium pantothenate and yeast simultaneously, and their findings were editorially discussed.[77] Para-aminobenzoic acid *per se* is water-scluble to such a small extent that it is unsuitable for parenteral use. Its sodium and calcium salts were tried clinically on a large group of patients. Although no toxic effects were observed, these salts did not produce appreciable pigmentary changes in the areas of leukoderma during four months of treatment. After studying other derivatives, monoethanolamine para-aminobenzoic acid was investigated. It was given parenterally once or twice daily in the gluteal region, and proved to be effective clinically as will be described. Ethanolamine itself was used similarly in a representative group of patients, but proved to be ineffective.

Discussion of Cases.—A series of 48 cases of vitiligo was studied over a period of ten months. In this group 25 were females, and 23 males; the age variation was from ten to seventy years. In the female group 13 were premenopausal and 12 postmenopausal. The duration of the vitiligo varied from two to twenty-eight years. The cases of shorter duration responded more rapidly than those of many years' standing. In most patients evidence of an inadequate diet for periods varying from months to years, and a history of endocrine imbalance was obtained. Fatigue, irritability, and emotional instability were almost constant. In the majority of cases, constipation, with gain in weight, and varying types of headaches were frequent. Arthritis or arthralgias were not uncommon in the detailed history of those patients. The physical examination in general revealed varying types of deficiencies, of which many cases presented classic findings consistent with hypothyroidism. Considerable variation in the distribution of the depigmented areas was observed. Leukoplakia of the mucous membranes of the mouth, atrophic changes in the papillae of the tongue, some thickening with slight coarseness and dryness of the skin, brittle nails, premature achromotrichia, subnormal oral temperature, and frequently hypotension were found in most cases in varying degrees. The basal metabolic rate was usually within normal range in the primary test, but subnormal levels were often observed in subsequent determinations. Before therapy was instituted the fasting blood sugar levels varied from slightly low to moderately high levels, a large number of patients showing marginal hyperglycemia. Routine blood counts varied, many cases showing a mild hypochromic anemia, the white cell count was usually low, but no true leukpenias were encountered. The differential smear often revealed a relative lymphocytosis. No case in this series had an eosinophilia.

In Chart I the cases are divided into sex and age groups, with division of the sexes essentially equal, 25 females and 23 males. The onset of vitiligo occurred more commonly in the first to the fifth decade of life in the female group, and in the second to the sixth decade in the male group. Among the females, 13 cases started at puberty, 12 during the menopause. Male cases, however, were seen more commonly at the climacteric age, with only 8 of the 23 cases beginning at puberty. Achromotrichia appears to be coincident with vitiligo, and practically equally distributed among both sexes: 16 females (64 per cent), 17 males (71 per cent). The slightly higher number of males may be explained by the higher incidence of male cases beginning at the climacteric age group. From these last figures the association of vitiligo with sex hormone metabolism may be as-

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sumed. Chart II presents the relative incidence of endocrine dyscrasia, inadequate diet, and achromotrichia. Although photographs could be presented for many cases, those illustrating cases 3 and 4 are considered adequate for the scope of this communication.

Method of Treatment.—On all patients an accurate history was obtained, including complete physical examination, routine urine, blood counts, smears, fasting blood sugar, nonprotein nitrogen, and basal metabolic rates. Careful examination was made for foci of infection, particularly prostatic infection in male patients. The caloric intake of each patient was then limited and an individual diet prescribed, which was balanced with respect to carbohydrates, proteins, fats, minerals, and vitamins. The endocrine balance was established by giving such hormones as thyroid extract, estrin, androgen, or anterior-pituitary-like extract. Before the protective action of para-aminobenzoic acid against the enzymatic destruction of stilbestrol had been recognized, this synthetic estrogen had been used. It was soon observed[78] that many female patients were thrown into an anovulatory menstrual phase which was easily controlled, however, by two to four injections of progesterone in 5 mg. doses. Therefore, stilbestrol was not used in any of the cases reported herein. All patients were given a potent elixir of the vitamin B complex, containing more than the daily requirements of each known factor of the complex. In addition, para-aminobenzoic acid was administered in form of 100 mg. tablets three or four times daily, that is, in dosage similar to that used in achromotrichia therapy.

From three to five weeks after treatment was instituted a check-up examination was made. A careful interval history was obtained, with special emphasis to elicit toxic manifestations. The blood counts occasionally showed a slight reduction in hemoglobin, red blood cells, or white blood cells. During this study, all as well as individual medications of the regime were omitted for specific intervals, to establish the agent causing these blood pictures. In a few cases para-aminobenzoic acid was felt to be responsible, but when the dose was increased to 100 mg. six times daily no appreciable change in the blood was noted.

The rate of repigmentation under oral para-aminobenzoic acid therapy was found to be slow. Some patients had been on the described regime for a period of eighteen weeks, without appreciable change in apigmentation. During a period of six to twelve weeks, some coloring of the milk white patches had been observed, such as a pinkish tinge, small islands

CHART I
DISTRIBUTION OF AGE AMONG 48 CASES OF VITILIGO

Age Groups	FEMALES				MALES			
	No.	Onset at Puberty	Onset at Menopause	Achromotrichia	No.	Onset at Puberty	Onset at Climacteric	Achromotrichia
10-20	4	4	0	0	2	2	0	0
20-30	7	7	0	4	6	5*	0	2
30-40	4	1	3	4	3	1†	1	3
40-50	7	1	6	5	7	0	7	7
50-60	1	0	1	1	5	0	5	5
60-70	2	0	2	2	0	0	0	0
Totals	25	13	12	16	23	8	13	17

*Sixth case: glandular complicated by diabetes mellitus.
†Third case: post-traumatic, fractured skull.

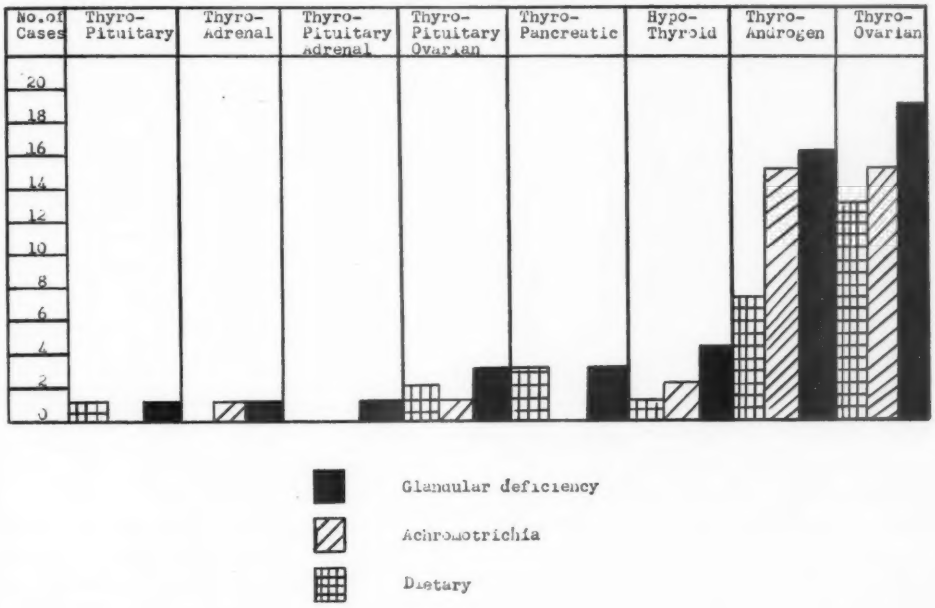
of pigmentation, and narrowing and fading of the marginal border. At this point parenteral monoethanolamine para-aminobenzoic acid therapy was instituted. This drug was first given in dosage of 100 mg. in 1 c.c. of doubly distilled water. Each ampoule contained 144 mg. per c.c., about equivalent to 100 mg. per c.c. of para-aminobenzoic acid. Data on the urinary output, nonprotein nitrogen, liver and renal function, and basal metabolism showed no appreciable change during a period of ninety days. A series of 20 patients were given 45 mg. of ethanolamine parenterally, two to three times daily, over a ninety day period. This investigation was conducted to ascertain whether or not this substance was by itself the stimulant to pigmentation. No change in pigmentation, nor toxic symptoms, were noted.

The parenteral administration of monoethanolamine para-aminobenzoic acid twice daily was continued. It was preferable to give the injections in the morning and evening, and to advocate a tablet of 100 mg. of para-aminobenzoic acid to be taken orally at noon and at bedtime, making a total of 400 mg. of para-aminobenzoic acid daily.

Clinically it was soon observed by the author, as well as by the patients themselves, that new pigmentation in the depigmented areas occurred. Within four to eight weeks the milk white areas of vitiligo turned "pinkish". It was particularly striking to note the loss of the blank white color. In six to sixteen weeks after therapy was started, small islands of brown pigment were usually noted within the areas of vitiligo. From these islands streaks of pigment were thrown out, similar to the pseudopodia of phagocyte cells. These streaks reached out to join distant islands of pigmentation, or joined other rays coming from the vitiliginous margins. A narrowing and fading of the illusory borders of the depigmented areas was observed. These peripheries, which had been darker in color, gradually became lighter until differentiation from the normal was impossible. In some cases the apigmented areas became erythematous, and patients complained of mild pruritis. As this subsided, new light brown pigment was observed. Some of these cases have now been under treatment for eighteen consecutive months. The results were striking after six to seven months of therapy.

No definite anatomical pattern can be described, yet certain sites responded more rapidly than others.

CHART II. VITILIGO WITH CONCURRENT DEFICIENCIES.



In most of the cases the torso was first to respond, particularly the anterior chest and the sacro-lumbar region. Invariably when there was torso involvement, a triangular patch of vitiligo, covering the fourth and fifth lumbar, as well as the first and second sacral vertebrae, was found. We have learned to use this patch as an index to therapeutic response. The region of the supra-orbital ridge, perinasal area, and perioral region responded next in rapidity. The upper and lower extremities, particularly the axillae and groins, were usually the last anatomical sites to change, although in some cases the perivaginal or scrotal, and perianal areas were even slower in regenerating new pigment. It is difficult to explain this anatomical variation, unless we accept Robert's[79] observations that the hair follicles are the first site for return of pigment.

CASES

Case 1. Mrs. E.T.A., a 41 year old, white housewife, was first seen on December 18, 1941, complaining of fatigue, vertigo, palpitation, and vitiligo of twenty-eight years' duration involving the entire body. Areas of vitiligo were first observed at the age of 12, eleven months after the onset of a severe gingivitis and stomatitis of unknown etiology, which persisted for six years, and necessitated a semi-solid diet. Extension of the vitiliginous areas was observed following a panhysterectomy in 1939. Physical examination disclosed areas of vitiligo throughout the face, neck, torso, and extremities. There were numerous pigmented, telangiectatic, and verrucous nevi scattered over the body. Other findings, and laboratory data, disclosed deficiencies as pointed out in the discussion of cases.

Treatment.—Para-aminobenzoic acid was administered orally, 100 mg., four times daily. Injections of estrin and anterior-pituitary-like hormone were given twice weekly to restore the endocrine balance. A small dose of thyroid extract was given, and an elixir B complex 5 c.c. twice daily. In addition, at the end of one month, the patient was given daily intramuscular injections of 144 mg. per c.c. of monoethanolamine para-aminobenzoic acid. One hundred and seventy-four injections of the latter were received. No toxic effects were encountered.

At regular examinations during treatment definite evidence of the return of normal pigmentation was observed, preceded by slight erythema and pruritus in some sites. The patient noticed that scars which were milk white gradually became darker. Vitiliginous areas, previously unaffected by sunlight, became red or tanned. At examination, October 19, 1942, the areas of vitiligo were pink, and in many there was almost complete return to normal pigmentation. This was most striking at the back of the neck. On the arms and legs the patches had diminished in size, or disappeared entirely. Similar changes were noted on the abdomen, hip and iliac region. It is interesting to note in this case that although treatment was interrupted for six weeks, there was no recession in the new pigment which had formed in the areas of vitiligo, although repigmentation did not increase until therapy was reinstituted.

Case 2. Miss D.E.G., a 30 year old, white teacher, was first seen on January 28, 1942, presenting general symptoms of fatigue, irritability, and flushes, as well as vitiligo of twenty-one years' duration, involving the entire body. Milk white spots were first observed on both thumbs at the age of 9. Two months after the onset of the catamenia, age 15, a patch of pure white hair appeared at the mid occipito-parietal portion of the scalp, with general involvement during the past year. The vitiligo progressed rapidly for two years, and then remained latent until three years ago, when it began to spread again. Vitiligo had occurred in three generations of her family. Because of religious conviction the patient ate no meat, fish, or eggs. At the physical examination, besides definite deficiency evidence, areas of vitiligo were observed throughout the entire body, particularly marked at the axillae and inguinal regions. The scalp was vitiliginous in character immediately under the area of pure white hair, with general graying as noted above.

Treatment.—The patient was placed on a 3000 calorie, high vitamin diet, including meat, fish, and eggs. A small amount of thyroid extract was administered daily, and 5 c.c. of an elixir B complex twice daily. Diethylstilbestrol, 1 mg., was given orally for twenty days after the menarche. Tablets of para-aminobenzoic acid, 100 mg., were given four times daily, along with calcium pantothenate, 10 mg., orally twice daily. Six weeks later the patient was given monoethanolamine para-aminobenzoic acid, 144 mg. per c.c., parenterally twice daily, replacing two oral tablets. Because diethylstilbestrol produced

an anovulatory cycle lasting thirteen days, it was replaced by α-estradiol 0.1 mg. daily. After six months of parenteral treatment the number of injections of monoethanolamine para-aminobenzoic acid was reduced to one daily, and para-aminobenzoic acid tablets were increased to three a day. Two hundred and fifty-one injections were given over a period of nine months. No toxic symptoms were encountered.

Examinations were made at regular intervals. In June, 1942, all medication was omitted for three weeks to allow a local abscess to drain. At this time the blood showed evidence of a mild hypochromic anemia, and the fasting blood sugar rose to 141 mg. per 100 c.c. One month later all treatment was reinstituted. During the next five to eleven weeks the pigmentary changes were much more rapid and pronounced than before the infection.

At the physical examination on February 12, 1943, the areas of vitiligo displayed marked return to normal pigmentation with almost complete disappearance of many of the patches. None of the areas showed the former blank white appearance. All were toned within normal flesh color. The apigmented areas about the nipples and areolae and the anterior chest were completely gone. Through the hips, abdomen, and back the vitiliginous areas were filled in about 60 per cent. Considerable return of pigment had occurred on the hands and feet.

Case 3. Miss N.G., a 23 year old, white pharmacist from Porto Rico, was first seen on January 14, 1942, presenting the usual general deficiency symptoms, with special complaints of dysmenorrhea, anorexia, dry skin and brittle nails. She had vitiligo of the entire body, especially marked on both legs. It had started thirteen years previously after a bruising accident. In the past two years slight graying of the hair had occurred. The past history was irrelevant except for mild typhoid fever at seventeen, and photophobia which had persisted since high school days. She ate practically no meat or fish. The familial history was negative, except for the father who had asthma. Examination showed, besides definite hormonal and vitamin imbalance, tiny areas of apigmentation scattered throughout the entire torso, the breasts, and areolae. The lower extremities from the feet to the knee joints had large areas of vitiligo with complete loss of pigment, and true dermographia (Photograph I, 1-15-42). A growth of white hair was noted through these areas of vitiligo. The line of demarcation between areas of apigmentation and normal pigmentation was clearly defined. Superficial pelvic examination disclosed vitiligo of the left side of the labia with white hair growth. Scattered over the body were a number of dark brown raised nevi, tiny flat brown nevi, and patches of raised papules and macules of an early psoriatic type.

Treatment.—Two 100 mg. tablets of para-aminobenzoic acid, and two intramuscular injections of

PHOTOGRAPH 1.—CASE 3. MISS G., 23 YEAR OLD PORTO RICAN PHARMACIST. VITILIGO OF 13 YEARS' DURATION.

1-15-42. Before treatment. 5-4-43. After sixteen months treatment.

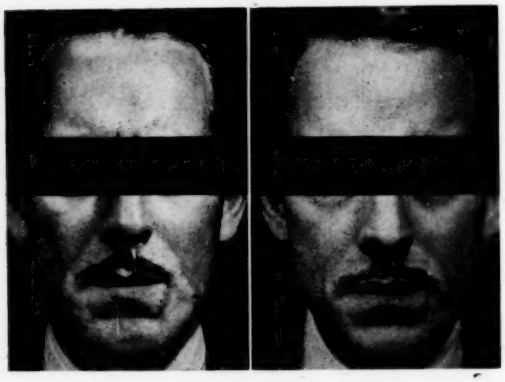
144 mg. per c.c. of monoethanolamine para-aminobenzoic acid were given every day. In addition oral and parenteral medication was given to restore the endocrine balance. An elixir B complex, 5 c.c., was taken three times daily. After four months of this regime the number of injections of monoethanolamine para-aminobenzoic acid was reduced to one daily, until a total of two hundred and fourteen had been received.

Marked improvement in the vitiligo and the patient's general condition was observed within ten weeks after treatment was instituted. Each successive examination showed progressive improvement in the vitiligo. In July, 1942, a tonsillectomy was performed. Physical examination on September 1, 1942, revealed that the vitiligo throughout the body and torso was completely repigmented, to such an

extent that there was difficulty in distinguishing any of the areas. Patches on the hands and arms were almost entirely filled in. The lower extremities showed definite improvement, with darkened areas, erythema, and islands of pigmentation, but there was still a distinction between the normal dark skin and the areas of improved vitiligo.

The patient was again examined on April 24, 1943. During the intervening period she had taken her medications only spasmodically, and had received no injections. She complained of recurrence of the general symptoms, but despite the lack of medication there was no regression in the areas of vitiligo. On the other hand, they showed some repigmentation, particulparly on the upper and lower extremities. Therapy was reinstituted, and after only two weeks a still further improvement was observed (Photograph I, 5-4-43). At no time were any toxic manifestations from therapy observed.

PHOTOGRAPH 2.—CASE 4. MR. P., 49 YEAR OLD EXECUTIVE. VITILIGO OF 4 YEARS' DURATION.



6-20-42. Before treatment. 2-2-43. After seven months treatment.

Case 4. Mr. R. J. P., a 49 year old, white, married executive, was first seen on June 20, 1942, presenting vitiligo and achromotrichia of three years' duration. In 1939, three years after a severe emotional upset, areas of vitiligo were observed periorally, extending in the next three months over the face, hands, torso, and legs, and accompanied by graying of the frontal, temporal, and occipital portions of the hair. Coincidentally, the usual general symptoms developed, with loss of appetite, urgency, frequency, nocturia, and diminished libido. His familial, past, and marital histories were irrelevant, except for a period of glycosuria lasting eighteen months, at the age of 15. Physical examination was negative except for definite avitaminosis and hormone dyscrasias, and the skin picture. Areas of vitiligo occurred throughout the body, concentrated particularly about the hair line in the frontal region, the forehead, around the nose, lips, and chin (Photograph II, 6-20-42). A large area of vitiligo involved the entire left side of the scrotum, this side being covered with pure white hair in contrast to the dark brown hair of the right side. Examination of the anus revealed perianal vitiligo. There was marked absence of pigment about the nipples and areolae.

Treatment.—The patient was put on a regime including a 1200 calorie diet, thyroid extract 0.065 Gm. daily, an elixir B complex 5 c.c. twice daily, diethylstilbestrol 0.1 mg. daily, para-aminobenzoic acid, 100 mg., four times a day. He was given two injections daily of monoethanolamine para-aminobenzoic acid 144 mg. per c.c. parenterally, omitting one tablet from the oral dosage for each injection received. Prostatic massages were given irregularly. A total of one hundred and thirty-three injections of the monoethanolamine para-aminobenzoic acid was received in a seven month period.

In December, 1942, the patient contracted a mild upper respiratory infection, followed by frequency, urgency, increased nocturia, and pain at the end of coitus. Rectal examination revealed slight edema of the left lobe of the prostate, edema and tenderness of both vesicles. The white cell count was 10,200, and fasting blood sugar 139 mg. per 100 c.c. Prostatic secretion was light brown, and microscopically revealed 40-50 white blood cells, and occasional red blood cells, per high powered field. The patient was given a short course of sulfonamides, local treatment, and anterior-pituitary-like hormone 1000 international units subcutaneously twice per week. All other medications were omitted during this period. The vesicular symptoms disappeared in ten days. At this time therapeutic carbon radiation was instituted for the vitiligo. The lamp was focused essentially on the head, neck, and chest.

Physical examination on January 30, 1943, revealed a marked improvement of all the general symptoms. The skin was more moist and of better tone. The striking contrast of normal dark skin against blank white vitiliginous skin was absent. The areas about the forehead, nose, perioral region, and chin were

pink brown in color, blending nearly completely with the normal skin (Photograph II, 2-2-43). Areas of leukoderma throughout the body were of a general pink tinge, with numerous small islands of pigmentation which had already started to coalesce. The scrotal area showed a well advanced return to normal pigmentation, the white hairs having acquired a golden brown color. No toxic effects were encountered during the course of therapy. Possibly the results described in the last physical examination were enhanced by the light therapy, thus corroborating Rothman's[80,81] observations.

Case 5. Mrs. A.L.E., a white, 64 year old housewife, was first seen on May 11, 1942, complaining of vitiligo of two years' duration accompanied by general distress, irritability, joint pain, and loss of appetite. For two years the patient's diet was faulty, and she ate no meat. Physical examination disclosed marked evidence of thyro-ovarian deficiency, and avitaminosis. On the skin there were areas of vitiligo about the mouth, eyes, and axillae, under the breasts, throughout the inguinal regions, and around the wrists, ankles, and knees.

Treatment.—The patient was placed on a regime of one intramuscular injection daily, of 144 mg. per c.c. of monoethanolamine para-aminobenzoic acid. Tablets of para-aminobenzoic acid, 100 mg. each, were given three to four times daily. Oral and parenteral medication was administered to restore endocrine balance. A total of fifty-five intramuscular injections of monoethanolamine para-aminobenzoic acid was received in nine months. No toxic effects were encountered.

One month after therapy was instituted the general condition was greatly improved, with definite darkening of the areas of vitiligo. The patient noticed that blanched white areas, previously unaffected, became reddened on exposure to sun. On physical examination, March 2, 1943, the skin was moist and of better tone. Many areas of vitiligo had disappeared, and others showed marked pigmentation, or were definitely pink, with less pronounced line of demarcation. In this case, also, therapy was interrupted for a period of several weeks, with no apparent recession of the newly formed pigment.

DISCUSSION

The detailed histories of the vitiligo patients in this series reveal the frequent occurrence of dietary changes, produced by disease, faulty metabolism, or diminished food intake. A continued reduction in diet ultimately leads to further metabolic disturbance which may change the bacterial flora within the gastro-intestinal tract, resulting in impaired bacterial synthesis which in turn may interfere with absorption.[82-85] All 5 cases described in detail present a common pathological dietary absorption mechanism. In case number 1 a deficient diet resulted from an infected mouth of six years' duration; case number 2 had faulty food intake because of religious conviction, and apigmentation was noted in three generations of her family; case number 3, because of geographic location and national custom, had avoided meat and fish; in case number 4 interference in absorption occurred following an emotional upset; and case number 5 suddenly omitted meat from her diet after many years of incorrect dieting.

Further analysis reveals the importance of the sex hormones in the occurrence of vitiligo. In the first three cases the onset was observed at puberty. The disease was aggravated by surgical castration in the first case, in the second by beginning estrogen deficiency, and in the third by a marked endocrine imbalance. The male climacteric period marked the onset in case number 4. In case number 5 the vitiligo started at the postmenopausal period, when estrogens are apt to play an important role in vitamin synthesis and metabolism.

The influence of extrinsic contributory factors on the course of vitiligo is also evident. Such irritants as trauma, infection, pressure points and light rays seem to definitely influence the course of the disease. These are apparently only contributory or irritating factors, however, and not of prime etiologic significance. In reference to the influence of infection on vitiligo, it is interesting to note that in cases 2 and 4, local abscess in the former, and acute vesiculitis in the latter, was followed by a temporary hyperglycemia. In both instances regeneration of pigmentation was more rapid and more pronounced in the five to eleven weeks following the period of hyperglycemia, many apigmented areas filling in 50 per cent to 60 per cent more rapidly, in approximately one-fifth of the time. An explanation for the acceleration of repigmentation during the period of hyperglycemia cannot be offered at this time, although it has been observed that vitiligo is relatively rare in adult diabetics, but fairly common in diabetic children.[86] The influence of infec-

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tion on repigmentation may be explained by the recent investigations of Landy *et al*[87] which showed that staphylococcus aureus organisms are capable of synthesizing para-aminobenzoic acid.

In order to obtain the maximum results parenteral and oral para-aminobenzoic acid therapy should be continuous. When interruption of the therapeutic regime does occur, there is no recession of the restored pigment, provided treatment is reinstituted within a three month period. This is evident in case 3 where therapy was stopped for six months, in cases 1 and 4 where treatment was discontinued for several weeks, and to a lesser degree in cases 2 and 5, where the interruption was of shorter duration. Although the process of repigmentation halted when therapy was stopped, there was no recession of restored pigment; when treatment was started again, repigmentation progressed more rapidly than before the interruption.

It will be noted that the specific vitamin, para-aminobenzoic acid, has been administered both orally and parenterally in all cases. Para-aminobenzoic acid, administered orally, does not maintain the necessary blood saturation, but monoethanolamine para-aminobenzoic acid, administered parenterally, liberates sufficient free para-aminobenzoic acid in the blood stream to maintain the required saturation level for a prolonged period of time. On the other hand, it is conceivable that the monoethanolamine derivative is more potent than the free acid, since Auhagen[88] found the 1-glutamic acid derivative eight to ten times as active as aquimolecular amounts of para-aminobenzoic acid. At the time of this report the effective level in human beings has not been calculated. Para-aminobenzoic acid, 100 mg. to 200 mg. parenterally is preferably supplemented by 100 mg. doses orally two to three times daily. Both forms of medication are needed to maintain proper blood levels.

No toxic effects have been found in a series of well over 200 cases treated for more than eighteen months with monoethanolamine para-aminobenzoic acid, alone or in combination with para-aminobenzoic acid orally. Kidney and liver function tests have repeatedly given normal values during the course of therapy. Less than 5 per cent of the cases have shown a tendency to mild hypochromic anemia which can be completely controlled by omitting the drug for one to five weeks, or by giving ten to fifteen units of liver extract parenterally bi-weekly for two to six doses.

The data presented would seem to emphasize the complexity of the bodily mechanism of melanin formation. A review of the literature for the past fifteen years disclosed the relative inefficacy of any agent, whether intrinsic or extrinsic, in the therapeutics of pathological pigmentation. Previous data of the author[71,73] indicated an association of endocrine imbalance with vitamin deficiency in faulty pigmentation processes. The effect of estrogenic hormones on pigmentation has been demonstrated by Bloch and Schrafl[89] and more recently by Gerstl.[90] The author[71,73] has shown B-vitamins to be effective in human achromotrichia. Rothman's investigations,[80] the results of which he had foreseen years earlier,[81] demonstrated that the vitamin para-aminobenzoic acid is an essential constituent of the skin, and is responsible for the tan darkening from actinic radiation. Para-aminobenzoic acid, in the opinion of the author, is considered as only a single link in an entire chain of factors involved in melanin formation. Its action may be by way of enzymic, and possibly intestinal processes, which tend to affect synthesis and absorption of vitamins. In the light of recent investigations,[91] it may be the "undetermined stimulant," suggested by Bloch,[92] for the dopa reaction. Further studies will undoubtedly reveal the specific action of para-aminobenzoic acid.

Although remarkable improvement has been observed in the 48 cases of vitiligo discussed in this communication, no claim is made that the therapy employed will give cures in all cases, nor that the vitamin, para-aminobenzoic acid, is a specific for this disease. However, the results obtained from the combined vitamin-hormone therapy have been most encouraging, and deserve extensive trial by other physicians. It should be emphasized once again, however, that the therapeutic course must include restoration of endocrine balance, eradication of vitamin deficiencies, removal of foci of infection, and administration of the specific vitamin para-aminobenzoic acid orally, and its monoethanolamine derivative parenterally.

CONCLUSIONS

1. The literature on the therapy of vitiligo for the past fifteen years has been summarized.

2. Dietary and hormone deficiencies were constant findings in all vitiligo patients examined.

3. A new approach to the therapy of vitiligo, involving combined vitamin and hormone treatment, is described.

4. Favorable results were obtained in 48 cases, 5 of which have been discussed briefly.

5. Para-aminobenzoic acid by itself, and in the form of its monoethanolamine derivative, was the specific agent used.

6. Para-aminobenzoic acid is considered to be only one of the many factors influencing melanin formation.

7. No toxic effects were encountered from the administration of para-aminobenzoic acid or its derivatives.

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National Conference on Medical Service.

Post-war distribution of medical care will be the theme for the nineteenth annual session of the National Conference on Medical Service to be held in Chicago, February 11, 1945. Medical legislation, physical fitness program, rehabilitation of veterans, latest word from the Washington front, relationship between labor and farm groups and medicine are among the topics to be discussed by nationally known speakers who will appear on the program. Also listed on the program will be an open discussion on prepayment medical plans, the principal advantages and defects of both service and indemnity types of insurance being presented. Congressman Arthur L. Miller of Nebraska, author of the Miller Bill to unify certain health services, is to be among the speakers.

All members of the American Medical Association are invited to attend. Detailed programs of the conference are now ready and may be obtained by writing Cleon A. Nafe, M.D., secretary, National Conference on Medical Service, 822 Hume Mansur Building, Indianapolis 4, Indiana.

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SOME OBSERVATIONS ON ACUTE PARALYSIS*

MAJOR MARSH MCCALL, M.C.,
and
MAJOR J. W. PENNOCK, M.C.,
Ashford General Hospital,
White Sulphur Springs, West Virginia.

In an analysis of 3,227 patients, slightly less than 1 per cent have suffered paralysis of an acute nature not associated with penetrating wounds. These afflictions have been of interest in view of the variety of etiological agents, known and unknown (Table 1), because of the unusual location of some of the lesions.

TABLE 1

ETIOLOGICAL AGENTS IN ACUTE PARALYSIS

A. CENTRAL LESIONS
1. Diphtheria
2. Meningococcus
3. Pneumococcus
4. Virus (?)
5. Malaria
6. Blast

B. PERIPHERAL LESIONS
1. Virus (?)
2. Unknown
3. Pressure

A. CENTRAL LESIONS

Following attacks of acute diphtheria, paralysis has occurred in approximately 50 per cent of the patients and is said to occur in a much greater incidence in those who are inadequately treated.[1] We have had one such paralysis occurring in a twenty year old soldier ten days after 75,000 units of antitoxin had been administered. The paralysis involved the ninth cranial nerves, manifested by impaired phonation and regurgitation of fluids through the nose. Partial paralysis occurred in the third week involving all extremities. Disturbances of the sensory system, including heat, cold and vibratory reception were not elicited. The deep reflexes were absent in all extremities. There was no reaction of degeneration four months after the onset of the paralysis, but the deep reflexes remained diminished and the gait slightly ataxic.

After lobar pneumonia the usual complications are pleural effusion, empyema, and pericarditis, while involvement of the meninges is a rare complication. Cerebral thrombosis and embolism are almost unknown entities following pneumococcal invasion. However, in one soldier this possibility was apparent. He was admitted to St. George's Hospital in London with a temperature of 105 degrees and acute delirium, associated with right upper lobe consolidation. The sputum was positive for pneumococcus type 10, as was the blood culture. Spinal fluid was normal. At the end of the third day of delirium, after adequate sulfadiazine therapy, right hemiplegia was apparent. There was no clinical evidence of endocarditis, but the endocardium might have been involved. The right leg rapidly improved, while the weakness of the right upper extremity and lower right facial paralysis persisted. At the end of three weeks an intention tremor developed in the right upper extremity, persisting to a marked degree at the end of six months' observation, while the paralysis showed marked improvement. This embolic lesion involved the lenticulo-thalamic branch of the middle cerebral artery which supplies the thalamus and genu of the internal capsule (Table 2).

TABLE 2

BRANCHES OF THE MIDDLE CEREBRAL ARTERY TO THE THALAMUS, CAUDATE AND LENTICULAR NUCLEI

A. MEDIAL STRIATE GROUP
1. Ascending Anterior Portion Caudate N.
2. Anterior Limb of Internal Capsule.
3. Anterior Portion Lenticular Nucleus.
4. Anterior End of Thalamus.

B. LATERAL STRIATE GROUP
1. Lenticulothalamic
   (a) Globus Pallidus.
   (b) Adjacent Part of Internal Capsule.
   (c) Best Part of Genu.
   (d) Large Part of Thalamus.
2. Lenticulocaudate
   (a) External Capsule.
   (b) Putamen.
   (c) Superior Radiation of Internal Capsule.

These thalamic and striatal lesions are not well understood, but a few facts are clear. It was ob-

*From the Medical Service of Ashford General Hospital, with the Technical Assistance of Pfc. Raymond H. Wagner.

Lecture delivered at the Fall Opening Meeting of Richmond Academy of Medicine, Richmond, Va., September 28, 1943.

served by Wilson[2] and others that, if one who has athetosis develops a hemiplegia, these involuntary movements disappear from the paralyzed limbs. If athetosis develops as the result of a capsular lesion which has produced a hemiplegia, these involuntary movements do not appear until the paralysis has largely subsided. Levin[3] has shown that these pyramidal and parapyramidal fibers are closely associated anatomically. For this reason both groups of fibers are expected to be involved by a lesion which produces a hemiplegia. The experiments of Dusser de Barenne, Garol and McCulloch[4] and Bucy[5] have clarified the modus operandi of such abnormal neurophysiology. They clearly demonstrated a series of vertical strips of cortex, the excitation of which is capable of suppressing the electrical activity of the precentral areas four and six from which the parapyramidal systems arise. These observers further demonstrated that the inhibitory influence which originates in the suppressor strips is not transmitted by any direct intracortical connection, but rather passes downward to the caudate nucleus to the thalamus and back to the precentral cortex. Actual anatomical demonstration of this circuit is not completely supported, but it is strongly suspected to be a fact. For this reason, when the suppressor mechanism of this pathway is interrupted, hyperactivity of the precentral cortex occurs. When this pathway is interrupted by a lesion in the basal ganglia, or in the ventrolateral nucleus of the thalamus, as shown by Schuster,[6] this hyperactivity of the parapyramidal system is released, and involuntary movements of the skeletal masculature appear. The lesion in this patient was thought to be situated in the ventrolateral nucleus of the thalamus or in the basal ganglia.

Meningococcus sepsis with bacteremia in epidemic form is not an unusual experience. When cerebral metastasis occurs it produces an uncommon and often confusing picture. Since the advent of sulfonamide therapy, few have been such complications. With one soldier the signs of the disease were characteristic, and the spinal tap yielded purulent fluid with 720 cells, mostly polymorphonuclears, and the culture was positive for meningococcus. There was no evidence of spinal block nor of focal brain abscess. Left hemiplegia appeared on the fifth day and has persisted more marked in the left upper extremity and left face, indicating that the right sylvian artery was involved in the metastatic process.

Various cranial nerve paralyses have been associated with so-called virus infection of the nerve or its nucleus. Those lesions which have interested us in particular have been associated with herpes zoster or atypical pneumonia. One soldier had a transient disturbance in the conjugate movement of his eyes following an acute upper respiratory infection which apparently was due to supranuclear involvement of the oculomotor pathways. Those lesions which produce interference with the conjugate gaze may be situated in the precentral region of the cortex or along the tracts conducting these impulses, or in the brain stem centers.

Three soldiers had involvement of the Gasserian ganglion associated with Bell's phenomenon. The general characteristics of their complaints included burning or itching of the lips, the involved area of the face and mucous membrane of the mouth. There was marked facial pain in one patient, whereas in two soldiers there was mere tingling associated with hyperesthesia of the involved face, nose and lips. With the temporary loss of taste of the anterior two-thirds of the tongue there were associated herpetic lesions on the tip of the tongue. The taste fibers to the anterior two-thirds of the tongue are derived from the chorda tympani branch of the facial nerve. Hence, temporary loss of taste is due to pressure upon these fibers by the degenerating lingual filaments of the trigeminal. Degeneration of the nerve central to the ganglion may interfere with normal gait and station, and this disturbance was noted in two of these patients. Accompanying these sensory changes there was weakness of the muscles of mastication.

Acute involvement of the seventh, ninth, tenth and eleventh nerves, associated with so-called virus infections, has been observed. One soldier had an acute onset of high fever with delirium, associated with dysphonia, regurgitation of fluids, inability to swallow, difficulty in breathing, and incomplete paraplegia. The spinal fluid was under a pressure of 200 mm. of water with 150 cells, mostly lymphocytes. A diagnosis of polioencephalitis was entertained. However, this soldier made a complete recovery, and we rather prefer to classify this disease as multiple neuritis involving several cranial nerves. Interestingly enough, one patient with virus encephalitis subsequently developed burning epigastric pain

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which persistently occurred between meals, associated with tenderness in the right upper quadrant. A study of his gastro-intestinal tract revealed unequivocal evidence of a duodenal ulcer. This calls to mind the observations of Cushing[7] who suggested that disturbances in the hypothalamus, conveyed along the vagus nerve, might be responsible for changes in the gastric mucosa, leading to the development of ulcer. Subsequently, Fulton[8] noted ulcerations of the stomach and proximal duodenum with hemorrhage following lesions of the interbrain.

Another soldier was hospitalized in Tunisia for measles. Ten days after the onset of his sore throat he complained of severe occipital headache, nausea and vomiting. The following morning phonation was impaired, fluids regurgitated, the inside of his mouth felt numb, and bilateral herpes zoster appeared on the lower lip. He was unable to move his arms and legs without great effort. There was no evidence of vagus disturbance. Spinal fluid examination revealed cell counts of ten and twelve lymphocytes on two occasions with the total protein elevated to sixty and eighty milligrams. Cultures were negative. Two complete blood counts were normal. Recovery of all paralyses was slow, for after two months diplopia was present on looking to the right and downward. Involvement of all branches of both facial nerves and poor phonation, persisted, as did impairment of gait and left upper ataxia. After four months there was marked residual involvement of both facial nerves without any apparent ataxia. Impaired phonation and slight weakness of the masseters persisted. The deep reflexes remained hyperactive bilaterally, but no pathological reflexes were found at any time. At the end of seven months the bilateral Bell's phenomenon was less marked (Fig. 1). There was slight weakness of both masseters, right palatal weakness, and impaired phonation; the deep reflexes continued to be hyperactive. The illness of these two patients with multiple cranial nerve lesions and incomplete paraplegia was probably due to virus invasion of the brain.

There has been an opportunity to study malarial fever in Army Hospitals. Patients returning from the South Pacific area have had their blood streams invaded by primary tertian malaria. The patients having mixed types of malarial fever are those with long terms of service in the Army, especially those who have had service in the tropics prior to the present war. Following a heavy parasitic invasion certain brain capillaries may become plugged with masses of corpuscles bearing parasites, accompanied by free parasites. This was demonstrated by Durck[9] during the last war. Focal necrosis may involve the blood vessels of the meninges and subcortical areas. One patient who returned to us following severe malignant malaria complained of left-sided weakness during the course of the first week of his hospitalization at which time the weakness of the left arm was pronounced. No pathological reflexes were observed. After four months there was no weakness of the leg, but slight weakness of the left arm persisted without any reflex abnormality. Malarial parasites have not been observed in his peripheral blood since June, 1943. Some malarial deaths are

Fig. 1.—Residual bilateral Bell's phenomenon was evident after seven months' observation.

undoubtedly due to the obstruction produced by these parasitic laden corpuscles. It seems reasonable to suppose that transient paralysis may be an aftermath of cerebral malaria, but from our observations one need not anticipate a great degree of permanence. Furthermore, there is reason to believe that the incidence of cerebral malaria and its complications have been reduced by our suppressive therapy.

Immersion-blast and open air blast injuries have accounted for many casualties in the present war. Familiar are the gastro-intestinal and pulmonary hemorrhages which have been repeatedly observed following immersion-blast injuries.[10] Soldiers subjected to high explosive blasts within the critical range have been killed instantly, or they have suffered disability caused by the concussion force of the exploding shell when the vibration in the cranial vault exceeded 28/sec/sec. The blast may cause

multiple cerebral petechiae, or it may produce gross hemorrhage in the cranium. If such hemorrhage involves the internal capsule, paralysis will ensue. Friedell and Auckland[10] did not note hemorrhages into the brain in their experimental animals. They felt that a blast wave sufficiently forceful to produce intracranial damage would certainly cause fatal lesions in the body cavities of their animals. However, Abbott, Due and Nosik[11] have called attention to a group of patients exposed to blast injury who have had loss of consciousness, memory loss, persistent headache, and transient hemiparesis. Accordingly, they have advanced the idea that these symptoms are characteristic of a subdural hematoma or effusion. We have followed one soldier who was picked up unconscious following a bombing raid in North Africa. The following morning complete right hemiplegia was apparent, associated with motor aphasia. Spinal fluid was under slightly increased pressure. Otherwise, there were no fluid abnormalities. A large subdural hematoma, involving the left motor cortex, might explain this syndrome. Victims of blast without focalization of the lesion often present a similar pattern. There is loss of consciousness for several hours, usually followed by loss of ideation, persistent headaches, irritability, and minimal neurologic changes. This syndrome offers a marked contrast to the so-called minor blast injuries with superimposed psychoneurosis, for these individuals build a multitude of somatic complaints about themselves.

B. Peripheral Lesions

Peripheral involvement of the facial nerve has been observed in six patients, associated with herpes zoster. In paralysis resulting from injury to the trunk of this nerve all the muscles on the affected side of the face were completely paralyzed. These soldiers were unable to close the affected eye or to frown, and the eyebrow drooped. Unlike the paralysis in supranuclear lesions, the muscles of the affected side take no part in the facial expression of laughing or crying. None of these peripheral lesions completely recovered. Restoration of taste occurred early but there was slight residual facial muscle atrophy. After six months two soldiers showed persistent involvement of the ophthalmic branch, manifested by incomplete closure of the eye and diminished corneal reflex. One soldier suffered complete right facial paralysis of the peripheral variety three weeks after sulfadiazine was given in the treatment of an acute specific urethritis. This lesion was not associated with herpes zoster. Recovery was incomplete at the end of six months. Whether or not the sulfonamide therapy had any relation to the facial neuritis was not apparent.

For the prevention of a few diseases certain immunizing substances are employed. Following such injections there is an occasional localized paralysis, and rarely some remote muscle is involved. The deltoid and serratus anterior muscles have been known to be the site of such paralyses following administration of diphtheria antitoxin or tetanus toxoid. One thirty-one year old soldier, whose foot drop occurred three weeks following the injection of tetanus toxoid, has been followed. When the paralysis appeared the soldier was in active preparation for foreign duty, and he complained of inability to march just prior to leaving. At the port of debarkation right foot drop, with claw-like deformity was noted, associated with slight atrophy of the tibialis anticus muscle, diminished right ankle jerk, and without any sensory change. There was no reaction of degeneration. Six months later tibialis muscle atrophy was marked and there was a positive reaction of degeneration.

We have seen two soldiers with serratus anterior paralysis of unknown origin. In both instances the paralysis involved the right serratus muscle, occurred while the soldier was on active duty, and without apparent cause. In neither instance was there history of trauma or undue effort. Both of these patients had well developed muscles and were slightly obese. Their course of prophylactic injections had preceded the appearance of paralysis by several months, nor could the paralysis be directly related to any infectious process. The serratus anterior muscle is supplied by the long thoracic nerve which is derived from the fifth, sixth and seventh cervical nerves. This muscle is concerned with carrying the scapula forward, and at the same time it acts to elevate the vertebral border of this bone. For this reason it is concerned in the action of pushing (Fig. 2). Its lower digitations, which are the stronger fibers, move the lower angle of the scapula forward, assisting the trapezuis muscle in rotating the bone at the sternoclavicular joint, and in this fashion assist in raising the acromion and support-

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ing weights upon the shoulder. Furthermore, after the deltoid has raised the arm to a right angle with the trunk, the serratus anterior and the trapezius,

Fig. 2.—Paralysis of the right serratus anterior muscle was apparent after six months of observation.

by rotating the scapula anteriorly, elevate the arm into an almost vertical position.

PRESSURE

Paralysis of the spinal accessory nerve is a rare phenomenon in civilian life. When this nerve is injured by external pressure, the innervation of the upper belly of the trapezius muscle is involved and less frequently the function of the sternocleidomastoideus muscle is impaired. The function of the trapezius muscle is to elevate the shoulder and abduct the scapula toward the mid-line (Table 3). When the upper belly of the muscle is paralyzed the involved shoulder does not move in respiration. When the lower portions of the muscle are paralyzed the weight of the involved arm pulls the acromion downward, the inner angle of the scapula is elevated and displaced outward by the levator angularis scapulae, while the lower angle of the scapula is drawn to the mid-line. For this reason the involved shoulder droops and usually the arm cannot be abducted beyond a 90 degree angle. When the entire muscle is paralyzed the glenoid cavity cannot be brought into a forward position to permit the head of the humerus to elevate the arm beyond an angle of 90 degrees unless the scapula is passively held against the chest wall.

Unilateral paralysis of the spinal accessory nerve has been noted in two soldiers, apparently due to carrying a heavily laden pack. There were no objective signs of residual paralysis in one of these soldiers who had just returned from overseas duty. On examination of the other soldier moderate atrophy of the clavicular portion of the trapezius was found, and elevation of the shoulder could not be maintained under firm pressure. The internal margin of the involved scapula was slightly displaced outward resulting in characteristic broadening of the back and shoulder. Anterior elevation of the arm was readily accomplished, but abduction could not be accomplished beyond ninety degrees, except when the scapula was firmly held against the chest wall. This movement is accomplished by rotation of the scapula forward by means of the action of the serratus anterior muscle which is necessary to complete the act of abduction. Stimulation of the normal trapezius required one-half the current compared with the affected side. Normal contractions were elicited in the serratus anterior,

TABLE 3

MUSCLES ACTING UPON THE SHOULDER GIRDLE

SIMPLE ELEVATION	UPWARD ROTATION
Trapezius (upper)	Trapezius (upper)
Lev. Scapulae	Trapezius (lower)
	Serratus Anterior
FORWARD MOVEMENT	**BACKWARD MOVEMENT**
Pect. Minor	Trapezius (mid.)
Lev. Scap.	Rhomboids
Serratus Anterior	and
and	Lat. Dorsi
Pect. Major	

rhomboid and deltoid muscles. These patients who suffered pack paralyses demonstrate the well recognized fact that the eleventh cranial nerve may be injured by external pressure. It becomes superficial when it pierces the sternocleidomastoideus and crosses obliquely across the posterior triangle of the neck to end in the deep surface of the trapezius. That this nerve is joined by branches of the second and third cervical nerves at variable levels, and forms a plexus with the fourth and fifth cervical nerves within the muscle, may account for the fact that relatively few of these paralyses occur.

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Find Early Physical Fitness Training Shortens Convalescence.

Physical fitness tests given AAF cadets recovering from acute, uncomplicated upper respiratory diseases to determine when it was safe and beneficial for them to participate in physical training programs revealed that they could do so earlier than had been commonly believed and that the participation reduced hospitalization time, Peter V. Karpovich, M.D., Randolph Field, Texas; Lieutenant Colonel Merritt P. Starr, Medical Corps, A. U. S., and Captain Raymond A. Weiss, Air Corps, A. U. S., report in *The Journal of the American Medical Association* for December 2.

The tests, which were given 417 cadets and students convalescing from primary atypical pneumonia, influenza, tonsillitis and other upper respiratory infections, consisted of stepping up and down on a 20 inch box at a cadence and for a period of time which were increased for each of three tests.

It was found that three days after an acute fever of two and a half days' duration a cadet could pass a physical fitness test equivalent to walking up to a height of 20 feet and down again in thirty seconds (approximately to the third floor of an average building). One and a half additional days after fever, the convalescent cadet could pass a physical fitness test equivalent to climbing 200 feet and coming down in five minutes (approximately to the twenty-first floor). After three more days he could pass the test for discharge to full military duty.

Those passing the first test took mild calisthenics in the ward and those passing the second and third tests participated in outdoor physical training.

The importance of physical training is emphasized by the finding that men with a high degree of physical fitness retained a high level throughout their illness, the investigators say.

Red Cross Denies Rumors That Plasma Is Sold.

A categorical denial of rumors that Red Cross blood plasma is being sold to the armed forces has been issued by Red Cross Chairman Basil O'Connor. The only end which such a rumor might achieve, it was pointed out, would be to deprive our fighting men of essential quantities of this life-saving substance.

"It has been called to our attention that rumors alleging Red Cross blood plasma is being sold to soldiers and sailors are being circulated throughout the United States," Mr. O'Connor said. "These rumors are vicious lies and apparently circulated by persons who wish to deprive our fighting men of life-saving plasma.

"The blood which more than 100,000 patriotic Americans donate each week to the Red Cross is turned over to the Army and Navy and processed by them into blood plasma, or flown as refrigerated whole blood to Europe and the Pacific.

"Full possession and control of the blood passes into the hands of the Army and Navy when the Red Cross ships it from its donor centers to processing laboratories. The Army and Navy, as is well known, administer this blood or plasma to wounded soldiers and sailors without any charge."

PALLIATIVE TREATMENT OF CARCINOMA OF ESOPHAGUS: REPORT OF A CASE

PORTER P. VINSON, M.D.,
Richmond, Virginia.

Carcinoma of the esophagus continues to present a therapeutic problem in spite of advances that have been made in its surgical treatment. Because of failure to recognize the disease at an early stage, the majority of patients who are operated on for malignant tumor of the esophagus prove to have a lesion far too extensive for excision and nothing is accomplished by exploration. In the few instances in which removal of the growth appears to be successful, the end results are usually disappointing because metastatic tumors not apparent at the time of operation have developed. The high degree of malignancy of carcinoma of the esophagus, with the prospect of almost inevitable recurrence of the growth after operation, presents a discouraging outlook even in the most favorable cases. Employment of radium and high voltage roentgen ray therapy has seldom produced curative or palliative results. Gastrostomy usually proves to be a nuisance to the patient and to the surgeon and rarely increases length of life or comfort. Mechanical dilation of malignant strictures of the esophagus provides a longer period of comfortable survival than any other treatment thus far suggested.

REPORT OF A CASE

A Negro, aged 74, entered St. Philip Hospital December 10, 1942, with almost complete esophageal obstruction. He had begun to have difficulty in swallowing solid food nine months previously, and obstruction had gradually become more pronounced until, at the time of admission, he could swallow liquids only. Three weeks prior to admission hoarseness developed and the patient had a frequent, brassy cough. Significant physical findings were moderate emaciation, paralysis of the right vocal cord and numerous firm, fixed, enlarged lymph nodes in the right cervical region. Roentgenoscopic examination revealed an extensive filling defect, characteristic of carcinomatous infiltration, in the upper third of the esophagus. The pathologic report on tissue removed from the lesion was squamous cell carcinoma grade 3.

When sounds were passed over a previously swallowed silk thread, an obstruction, apparently about 2 inches (5 cm.) in length, was located 8 inches (20 cm.) from the incisor teeth. The area of stenosis was dilated with ease to the size of a 45 French sound, after which the patient was able to swallow all types of food without difficulty. He was dismissed from the hospital December 16.

During the past year eight subsequent dilations have been required to maintain the lumen of the esophagus. At present, one year after the beginning of treatment, the patient is able to eat any variety of food for a month after the passage of dilating sounds, and he continues his work as a janitor in an apartment hotel sixteen blocks from the hospital. He rides a bicycle from his work to the hospital, receives the dilation and rides back to his place of employment. Hospitalization has not been necessary since the date of his first treatment, and he has not lost any time from work (figure).

Photograph of patient taken one year after beginning of palliative treatment of carcinoma of the esophagus by dilation.

SUMMARY

A patient, 74 years of age, suffering from carcinoma of the esophagus, had noted dysphagia for nine months prior to his first examination, at which time obstruction of the esophagus was pronounced and metastasis to the cervical lymph nodes had developed, with involvement of the right recurrent laryngeal nerve and paralysis of the right vocal cord. Repeated dilation of the malignant stricture has resulted in marked palliative relief and has enabled the patient to continue at his work for a year. The general condition of the patient, one year after the beginning of treatment, is more satisfactory than it was when he was first examined.

Medical College of Virginia.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, under usual library rules:

Annual report of the Smithsonian Institution. 1943.

Appleton—Bacterial infection. 2nd. ed.

Arthus—Maurice Arthus' philosophy of scientific investigation.

Belding, D. L.—Textbook of clinical parasitology.

Bispham, W. N.—Malaria: Its diagnosis, treatment and prophylaxis.

Brill, A. A.—Freud's contribution to psychiatry.

Collier, Howard E.—Outlines of industrial medical practice.

Dewey, J., & Tufts, J. H.—Ethics.

Dodd, W. F.—Administration of workmen's compensation.

Eagleton's Index—Abstracts of progress in intracranial lesions related to aural and nasal conditions.

Eliason—First aid in emergencies.

Fry, S., McLeod & Parfill—Supplement to the dental treatment of maxillo-facial injuries.

Gafafer, William, ed.—Manual of industrial hygiene and medical service in war injuries.

Galdston, Iago—Maternal deaths—ways to prevention.

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Goodman & Gilman—The pharmacological basis of therapeutical basis of therapeutics.

Grant—An atlas of anatomy.

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Gunther, C. E. M.—Practical malaria control, a handbook for field workers.

Harrison, Gene—Professional adjustments. I & II.

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Hertzler, A. E.—The grounds of an old surgeon's faith.

Higgins, C. C.—Renal lithiasis.

Hoff, P. M.—A bibliography of aviation medicine supplement. 1944.

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Jaeger, Edmund C.—A source book of biological names and terms.

Johnson, Charles S.—To stem this tide, a survey of racial tension areas in the United States. 1943.

Jokl, Ernst—Medical aspects of aviation. 1943.

Jones, Harold E.—Development in adolescence.

Lewis—Diseases of the heart.

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Munoz—The microscope and its use.

Nauss, R. W.—Medical parasitology and zoology.

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Rich—The pathogenesis of tuberculosis.

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Saphir, Otto—An outline of tropical medicine.

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ABSCESS OF THE SPLEEN WITH DIAPHRAMATIC PERFORATION—CASE REPORT

PAUL R. LANG, M.D.,
Pittsburgh, Pennsylvania,
and
CHARLES F. JAMES, JR., M.D.,*
Appomattox, Virginia.

INTRODUCTION

Splenic abscess is of infrequent occurrence in surgical practice, but more frequent to the pathologist, so, in an effort to reverse this, our case is reported. The diagnosis is seldom made pre-operatively and, if it is made, a secondary possibility is usually mentioned.

In the majority of cases reported, the sequence of events is very clear cut and we believe the diagnosis is not thought of; consequently, it is missed or treatment delayed. The subject of splenic abscess may be divided into traumatic abscess of the spleen and abscesses due to systemic infection. Inlow,[1] in 1927, in a review of the literature, revealed that traumatic abscesses of the spleen constituted 15 per cent of splenic abscesses. The type of injury to the splenic area produced contusion, or rupture of the spleen with secondary infection of the hematoma or contused tissue lead to abscess. The treatment was surgical and the mortality was 38 per cent on those operated upon. Eighty-five per cent of the cases reported are due to infection arising from all parts of the body. These infections are local or general and

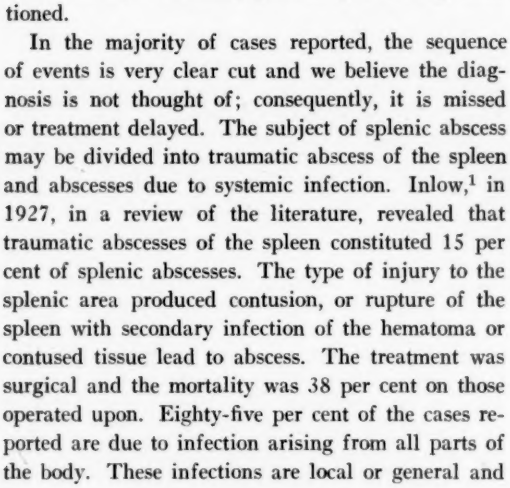

Fig. 1.—Enlarged spleen showing abscess with rupture.

are metastatic. Cutler[2] reported a case from bilateral otitis media. Eliason's[3] case followed a peritonsillar abscess. Walker's[4] case followed mastoid infection with extra dural abscess. Billings[6] reported three cases with recovery following operations; one followed puerperal sepsis, another a carbuncle, and the cause of the third was not known. Fauntleroy[7] reported a case following appendicitis in which the clinical course was almost identical with our case.

Many infections have produced abscesses of the

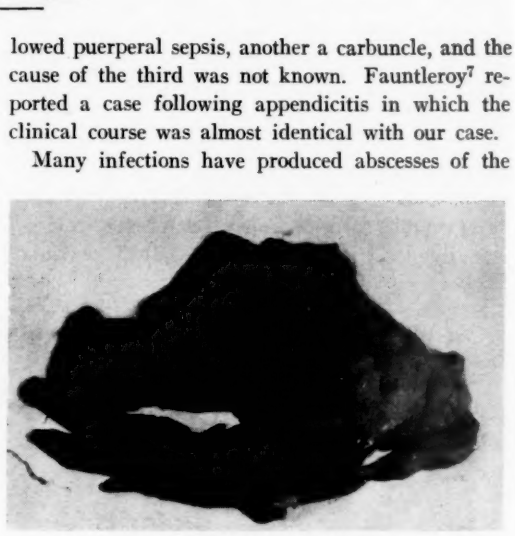

Fig. 2.—Left diaphragm with perforation from rupture of splenic abscess.

spleen, such as typhoid fever, malaria, pneumonia, phlebitis, and appendicitis. Septicemia occurred in twenty-eight of thirty cases, including two with typhoid fever as reported by Walker,[4] consequently, septicemia with or without positive blood culture is a very important diagnostic point.

Elting[5] reported that, with the exception of the gonococcus, most other pyogenic bacteria have caused splenic abscesses. A small percentage of these abscesses are due to contiguous pathological processes such as carcinoma of the stomach or colon, ruptured gastric ulcer, perisplenic abscess, or accident, as in kidney operations.

The usual sequence of events is the initial focus of infection with septicemia, a varying latent period, then the splenic embolism or infarct with associated pain, with sudden onset in the left hypochondrium. The pain may or may not radiate to the left shoulder or the costo-vertebral angle, but it is made worse on coughing and forced expiration. The septic temperature, sweats, chills and leucocytosis complete the picture. In our case the spleen was not palpa-

*Now Major in the Medical Corps, U. S. A., with the 104th General Hospital.

ble nor was there tenderness. The degree of tenderness would be influenced by the location of the abscess. An upper pole abscess is so protected by the rib cage that tenderness can be entirely absent. Walker[4] states that out of thirty cases, twenty-two were multiple abscesses, and only eight were single. Multiple splenic abscesses of the upper third that have not coalesced will not affect the diaphragmatic excursion as seen by roentgen examination. Lower half abscesses are apt to give an abdominal picture due to peritoneal irritation and displacement of abdominal organs if the process is large enough. In the differential diagnosis the kidneys and colon can be excluded by appropriate roentgen studies. Abscesses involving the center of the spleen can give a very obscure picture due to lack of tenderness or displacement as in the case presented.

CASE REPORT

Patient, 47 year old white male, admitted to the Medical Service complaining of mild attacks of abdominal pain and constipation of three months' duration, with passage of pencil type stools with no blood and of normal color. The pain had increased in severity three days before admission and had become more frequent and intermittent in character, with a noticeable increase in the size of his lower abdomen. He had never consulted a physician as to his complaints before the day of admission to the hospital. There was loss in appetite several days before admission but no weight loss in the past few years. There had been no vomiting during his illness. Other history was non-contributory.

On admission his temperature, pulse and respirations were normal and his weight was 147 pounds. Positive physical findings revealed a moderately distended, tympanitic lower abdomen below the umbilicus with audible peristalsis but no palpable mass either abdominally or on rectal examination. The remainder of the examination was essentially negative except for audible extra ventricular contractions. His systolic pressure was 102 and diastolic 64.

Laboratory examination on admission revealed a normal urinalysis; R.B.C. 4,600,000; W.B.C. 11,150; Polys. 78 per cent, and Lymphs 22 per cent; sedimentation index 19 mm. in 60 minutes; blood sugar 105, NPN 32.

The patient did not appear to be in too much discomfort, although he appeared to have and complained of considerable abdominal pain during his intermittent episodes. The next morning after admission a barium enema was reported as showing a deformity of the head of the cecum apparently from some extrinsic pressure.

Twenty-four hours after admission his temperature was 100.2°, pulse 96, W.B.C. 12,250, with 83 per cent polys. There was more abdominal distention in the lower abdomen. Surgical consultation was requested and the patient was accepted to surgery with a diagnosis of acute intestinal obstruction, incomplete, probably from extrinsic inflammatory mass from x-ray interpretation.

Following pre-operative intravenous fluids the patient was explored through a lower right paramedian incision under spinal anesthesia, using 17 mgms. pontocaine.

In opening the peritoneal cavity there were visible loops of distended small intestines proximal to the distal ileum that appeared bounded in an inflammatory mass which, when evacuated, revealed thick purulent material with a fetid B. coli odor. After evacuation of as much pus as possible, the extrinsic pressure on the distal ileum seemed to be relieved. The exact origin of the mass could not be determined but was presumably from a large appendiceal abscess; however, the appendix was not seen or disturbed. Six grams of sulfanilamide powder was introduced into the peritoneal cavity and, because of the extensiveness of the abscess and inability to remove all pus, the wound was drained with Penrose drains through the initial incision and lateral stab wounds in the right and left pelvic regions.

The patient was given stimulants and 500 cc. plasma during the operative procedure. A Levine tube was passed into the stomach and connected to a Wangensteen suction on return to bed. The patient had a very stormy post-operative course but improved after the third post-operative day following oxygen and intravenous chemotherapy (sodium sulfadiazine). The gastric suction was discontinued after the fourth post-operative day and the patient was able to take fluids by mouth, but additional fluids were given by vein (plasma, blood and glucose) to maintain fluid balance. His temperature was normal on the fifth post-operative day and his condition seemed improved. Drainage from the wound had been profuse but was decreasing in amount, so that one drain was removed on the fifth post-operative day and the other two shortened.

XUM

The temperature remained normal until the tenth post-operative day when it suddenly rose to 102°. At this time the patient complained of pain in the right upper quadrant and was quite tender but no detectable mass. A portable film of the abdomen showed slight elevation of the right diaphragm with no fluid level. Forty-eight hours later the temperature was elevated in the evenings and at this time a tender mass was palpable in the right upper and lateral quadrant.

Using local infiltration of procaine hydrochloride 1 per cent, the lower five intercostal nerves were blocked and the subhepatic abscess was drained through a high right iliac incision. A moderate amount of thick fetid material was evacuated and the wound was closed with drainage after introducing 5 gms. sulfanilamide.

On the second day following this operation his temperature was normal and remained normal until he developed pneumonia in the right base, sixteen (16) days following his second operation. He recovered from the pneumonia in three weeks and all wounds had healed or were granulating. He was convalescing and walking about but complained of occasional epigastric discomfort with sensation of gas on his stomach which was relieved by passage of flatus. His temperature, pulse and respirations were normal but he continued to complain of occasional abdominal discomfort. Gastro-intestinal and colon study with x-rays revealed no abnormalities.

On the ninety-first day following first operation he complained of pain in his left chest for the first time. This pain was not severe and was not aggravated by respirations. His temperature rose to 101° and was remittent in type with intervals of normal temperature for twenty-four to forty-eight hours. Physical examination and x-ray studies of the chest, diaphragm and abdomen revealed nothing to account for his fever. Several days after temperature was elevated he started having frequent chills with temperature spiking to 103° to 104° and returning to normal after a few hours. Laboratory studies revealed only elevated white count and corresponding elevation in polys. Frequent blood cultures taken at different times were all negative. X-rays of the chest and diaphragm were frequently checked for the possibility of diaphragmatic abscess. Intravenous chemotherapy and multiple small blood transfusions did not improve the patient.

During intervals between chills patient felt very well and had a fair appetite.

Medical consultations and additional surgical advice suspected patient of having liver abscess with the suggestion of exploration and aspiration of liver if patient did not improve after one week of observation.

Ten days following episode of chills and remittent fever, the patient was prepared for operation with intravenous fluids including blood transfusion. Under gas, oxygen and ether anesthesia, the patient was explored through a upper right paramedian incision. The liver was moderately enlarged and of normal color, with no palpable evidence of abscess formation. The gall-bladder was normal and there were only a few adhesions encountered in the cecal region. The intestines appeared and felt normal throughout. Both domes of the diaphragm were free and the spleen and kidneys were not enlarged and felt normal. After exploring the organs and no accountable cause found for the chills and fever the liver was aspirated in three areas with no pus being obtained.

The patient withstood the operative procedure well and progress was satisfactory post-operatively except for continued chills and fever. Four days following operation patient was started on Penicillin therapy; 30,000 units were given intramuscularly every three hours until one million and five hundred thousand units were given without any beneficial results, with chills and fever occurring as before. The last chest x-ray was taken one week after his last operation and was normal. All blood cultures continued to be negative.

Patient seemed to gradually decline following chills and high temperature, and developed chest signs of pulmonary edema on the fifteenth post-operative day of his third operation and expired thirty-six hours later.

PATHOLOGICAL DIAGNOSIS

1. Splenic abscess, solitary, large, involving mid and upper pole of spleen, with ulceration and sloughing of corresponding portion of diaphragm and producing left pyothorax. The appearance suggested recent perforation.
2. Multiple small liver abscesses.
3. Toxic changes in the major organs.
4. Healed appendicitis.

All areas in the liver were pinhead in size and

some areas showed signs of healing and scarring. The fluid in the left chest and the area of perforation through the diaphragm gave the appearance which suggested recent perforation.

Cultures of the abscesses taken at autopsy produced no growth.

DISCUSSION

The probable sequence of events in this case are acute suppurative appendicitis with rupture and abscess formation resulting in partial intestinal obstruction from extrinsic pressure; pyelophlebitis with multiple liver abscesses and subhepatic abscess; septic infarction of spleen with abscess of upper pole perforating the left diaphragm, resulting in left pyothorax.

The diagnosis of splenic abscess can be made before rupture if it is thought of and aspiration of the spleen done under direct vision during exploratory laparotomy.

From our experience and a review of the literature the presence of pain in the upper left quadrant (infarction) of short duration and sudden in onset with signs of sepsis (chills, sweats and spiking temperature) following an acute infection is rather characteristic of splenic abscess after urinary and chest pathology is excluded.

The abdominal findings are practically nil before the period of rupture of the abscess through the splenic capsule.

SUMMARY AND CONCLUSIONS

1. A 47 year old white male was operated on for acute intestinal obstruction caused by a large extrinsic mass, inflammatory in origin, presumably appendiceal in origin.
2. Fifteen days post-operative he developed a subhepatic abscess which was drained surgically with recovery.
3. Fourteen days following his second operation he developed pneumonia in the right base and recovered.
4. Patient was up and about, but complained of obscure abdominal pain. A check-up of his gastro-intestinal tract with x-rays at this time was normal.
5. On the ninety-third hospital day he had a chill and temperature of 103.6. These chills and temperature elevations were remittent in type and patient felt very well between chills.
6. Multiple blood transfusions, plasma, chemotherapy and penicillin were not beneficial. X-rays of chest and abdomen did not reveal any pathology.
7. No positive blood cultures were obtained. Checked by several laboratories.
8. Exploratory laparotomy for liver abscess revealed no pathology to account for chills and fever.
9. Icterus index was normal until forty-eight hours before expiration when it rose to 150.
10. This case presented the symptom of upper left quadrant pain, which is usually present in splenic abscess but a clinical diagnosis of splenic abscess could not be ascertained.
11. Patient expired on the 120th post-operative day.

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TREATMENT OF PERIPHERAL VASCULAR DISEASE WITH PADUTIN†— (DEPROTEINATED PANCREATIC TISSUE EXTRACT INSULIN-FREE)

NATHAN BLOOM, M.D.,
and
DEXTER ABELOFF, M.D.,
Richmond, Virginia.

Frey and Kraut[1] in 1926 stimulated workers in the field of peripheral vascular disease to use a pancreatic tissue extract in the treatment of these disorders. It has been stated that this preparation is a vascular hormone derived from the pancreas, but differing fundamentally from insulin. It is a complex molecular structure and its chemical constitution is not definitely known. In animal experiments the drug has caused lowering of blood pressure and increase in the skin temperature of the extremities.

Several American investigators, Fisher *et al*,[2] Fatherree and Hurst,[3] and Gorham and Climenko,[4] have reported favorably on the effects of pancreatic tissue extract in relieving intermittent claudication, thus advocating its use in the treatment of various peripheral vascular disorders. Klein *et al*,[5] have not been as keen in their appreciation of this vascular hormone. They found no improvement in skin temperature or immediate claudication time and considered that after six to eighteen months of treatment there was no effect on vascular anatomic or tissue anatomic status, on vascular reserve or on functional classification.

In order to evaluate the studies by these various authorities, we decided to approach the problem by using two objective tests, the oscillometer readings and histamine cutaneous reactions. These tests were chosen because, in our experience with clinic patients, their subjective reactions have not been uniform and claudication experiments could not be truly evaluated, as so many of these individuals had other infirmities preventing them from walking at a uniform pace. Skin temperature studies could never be satisfactorily controlled, even in a control room. It was thought that, if we could eliminate the human equation and use these objective tests, a better concept could be obtained about the efficacy of the drug.

METHOD OF STUDY

The fifteen cases under observation were given complete medical and peripheral vascular examinations. Before determining oscillometer readings and histamine cutaneous reactions, each patient was allowed to rest in a recumbent position for at least one-half hour. Oscillometer readings were obtained with a Collins' sphygmo-oscillometer. Normal readings at each ankle were considered between two and four units. These readings were repeated at frequent intervals, following eight to seventy injections of padutin intramuscularly. Histamine cutaneous reactions were obtained by pricking a drop of histamine phosphate, 1-1000, ten times at each ankle. This test was considered normal if a noticeable flare or wheal appeared within five minutes. The flare was difficult to interpret in negro patients and for these cases the wheal was more important. This test was also repeated frequently, following eight to seventy injections of padutin intramuscularly. The drug was injected in ten unit doses. Most of the cases were given two injections weekly, but several took an injection daily for twenty to thirty days.

COMMENT ON CHARTS I AND II

Although a variation of less than one unit in os-

CHART I

EFFECT OF PADUTIN ON OSCILLOMETER READINGS

Case	Age	Diagnosis	No. Injection	Oscillometer Reading—Ankle Before Right	Before Left	After Right	After Left
C.K. 1	65	ASO*	23	0	0.25	0.5	0.75
A.M. 2	65	ASO	16	0.25	0.25	0.25	0.75
T.B. 3	55	ASO	14	0.75	0.25	0.75	0
E.K. 4	51	ASO	33	1.0	1.0	1.5	1.5
F.N. 5	58	ASO	20	2.0	1.0	1.75	1.5
H.W. 6	58	ASO	56	1.5	1.5	.75	2.5
F.F. 7	64	ASO	20‡	0.5	0.75	0.25	0.75
J.S. 8	69	ASO	8	0.75	0	0.75	0
A.J. 9	57	ASO	15	1	1	1	1
J.J. 10	68	ASO	20‡	0	0.25	0	0.25
J.W.11	45	TAO†	60	**	0.25	**	0.25
P.H.12	70	ASO	15‡	0	0.25	0	0.25
E.S. 13	35	TAO	20	1	2	1	2
H.H.14	44	TAO	70	0	2 5	0.75	3
G.A.15	43	TAO	30‡	0	1	0	1

*ASO—Arteriosclerosis obliterans.
†TAO—Thrombo-angiitis obliterans.
‡Daily. **Amputated.

From the Department of Medicine, Medical College of Virginia.

†Padutin niphanoid was supplied by the Department of Medical Research, Winthrop Chemical Company, New York.

cillometer readings is considered within the limits of error, we arbitrarily decided that any higher readings after padutin would be considered as improvement. Therefore, five of the fifteen cases were considered improved, because there were slight increases in oscillometer readings. The histamine cutaneous reactions also showed improvement in five of the fifteen cases, but only in cases one, six, and fourteen, did the histamine reaction coincide with the oscillometric improvement.

CHART II

EFFECT OF PADUTIN ON HISTAMINE CUTANEOUS REACTION

		Ankle			
		Before		After	
Case	Diagnosis	Right	Left	Right	Left
1	ASO*	5.5	3.5	4	4
2	ASO	4	4	4.5	5
3	ASO	8	8	4.5	5.5
4	ASO	5	3	6	6
5	ASO	4	5	6	3.5
6	ASO	0	0	7	3.5
7	ASO	0	3	0	3.5
8	ASO	0	0	0	0
9	ASO	5	5	5	4.5
10	ASO	0	0	0	0
11	TAO†	**	0	**	0
12	ASO	0	6	0	6
13	TAO	5	5	5	5
14	TAO	6	4	5	4
15	TAO	7	4	7	3.5

*ASO—Arteriosclerosis obliterans.
†TAO—Thrombo-angiitis obliterans.
**Amputated.

DISCUSSION

It would seem from these objective findings that padutin had no great efficacy as a therapeutic agent in thrombo-angiitis obliterans or arteriosclerotic obliterans. We must admit that several of the patients were very enthusiastic as to the value of the injections, insisting that they could walk further with less pain, but in a careful analysis of their claims, and exercising these special cases on a flat walking surface, very little improvement could be seen. Skin temperature studies and claudication times were obtained on several of these patients who did not have coronary heart disease or disabling arthritis. The data accumulated from these tests still conformed to the findings after histamine cutaneous reactions and oscillometer readings.

In order to be perfectly fair in our evaluation of this drug, it must be stated that these patients were the usual clinic individuals and those chosen for daily injections of padutin over a period of from fifteen to thirty days, were cases with very poor circulation and all other methods of therapy had also failed. It is possible that our present tests for circulatory efficiency are too crude to show slight increases in blood flow and we may not be using large enough quantities of the tissue extract at each injection.

CONCLUSION

Oscillometer readings and histamine cutaneous reactions were not appreciably changed in cases of peripheral vascular disease after injections of padutin. Further studies, with larger doses, may be necessary to prove the drug's efficacy.

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MENINGOCOCCEMIA—A REPORT OF FIVE CASES

BASIL B. JONES, M.D.,
Richmond, Virginia.

It is now rather generally conceded that the meningococcus first finds lodgment in the upper respiratory tract. In this location, it may produce local symptoms which rarely are associated clinically with such a potentially dangerous organism or it may live as a saprophyte. According to Levinson,[1] from 40 to 70 per cent of the population in affected areas have been found to harbor the meningococcus during epidemics.

A carefully taken history will usually reveal that the patient with meningococcemia had experienced symptoms of a coryza a few days before the onset of severe symptoms. Whether or not the preliminary coryza was due to the meningococcus, to some other organism or virus, to some allergen or to any combination of these factors, cannot be stated definitely.

The possibility that some allergen, e.g., orange juice, or the allergic constitution itself, may play the role of accomplice, is suggested by the following case reports. Whatever may be the cause of the preliminary pathology, it is probably through the affected mucous membranes that the invasion of the blood stream occurs.

The five cases reported here in chronological order were all seen within twelve months' time in private practice, and four of the five were treated at home. So far as I can recall, they comprise the only cases of meningococcus infection in my practice which were recognized and treated before meningitis occurred. The probability that such opportunities will continue to occur justifies this report.

1. W. T. Eleven months old. This patient was first seen at the age of eight months for convulsive seizures, severe constipation, and regurgitation of food. Orange juice had caused a skin eruption and had been replaced by ascorbic acid. Physical examination revealed a hemiplegia of the right side. When seen at home on February 23, 1943, the mother said that the baby had had a head cold for four days, with no fever until that day. During the day, the temperature jumped quickly to 104.8 (R) and a few skin lesions appeared. When I saw the child about 6 P. M., the temperature was 102.4 (R), and about thirty pin-head size lesions were found scattered about in the skin. These consisted of a central petechial dot and a small ring of erythema. The nose was open; the right ear drum was slightly pink. There was a slight mucoid drainage post-nasally, but the pharnyx was not red. Physical examination otherwise was essentially negative except for the old hemiplegia.

A throat culture was taken and sent to the Virginia State Laboratory shortly before time for cultures to be planted, and the patient was started on sulfadiazine immediately. No meningococci were found in the throat culture. The baby had no fever the next day and seemed as well as ever. On the third day the medication was stopped. A provisional diagnosis of meningococcic septicemia was made. Following this illness the patient stopped having the convulsive spells and has shown greater improvement than had been anticipated. This improvement had started after the patient had been given fresh cow's milk, prior to this illness. Before trying the fresh milk both evaporated goat's milk and Mullsoy had been substituted for the evaporated cow's milk with poor results. The convulsions seemed to be definitely associated with the regurgitation and constipation as all three stopped with the change in diet.

2. D. P. Three and a half years old. The past history was essentially negative except for cranio tabes as a baby, small testicles, and inability to take orange juice and Oleum Percomorphum.

April 22, 1943. The patient was taken sick on the twenty-first. He had fever, abdominal pain, and pains in his hands and feet. He had vomited twice. Physical examination: temperature 104 (R); eyes and ears normal; slight nasal congestion; pharnyx was about normal. The physical examination otherwise was negative except for skin lesions, apparently hemorrhagic in type and of varying sizes, scattered over the trunk and extremities. Slight, if any, stiffness of the neck. Reflexes were normal. Sulfadiazine about one grain per pound of body weight daily and nicotinic acid ten milligrams every four hours were started after blood culture was taken by Dr. Richard C. Neale.

April 23, 1943. No more vomiting. The temperature fell during the night.

April 24, 1943. No more fever. The patient feels

1. Levinson, A., Brennemann Practice of Pediatrics: IV:28; page 46.

well. Physical examination: no abnormalities found except the spots in the skin which were fading. Blood culture was reported positive for meningococcus. The blood counts were as follows: RBC 3,740,000; WBC 13,500; hemoglobin 78 per cent; juvenile 2 per cent; stab 15 per cent; segmented 62 per cent; lymphocytes 21 per cent. Description of the smear: The red blood cells appeared normal in size, shape, and hemoglobin content. No immature red cells were seen. The white cells showed moderate toxic degeneration. Cultures made from the throat showed a small number of non-hemolytic streptococci only.

3. C. T. One year old. The patient was first seen at six months of age for otitis media with fever of 104. The patient was still being nursed and was taking orange juice apparently without trouble. Physical examination was essentially negative then except for swollen red drums, slightly red and swollen pharnyx and cranio tabes. He recovered in three days with sulfadiazine treatment. Ten days later he was sick again with exanthem subitum.

September 10, 1943. After a slight diarrhea for a week he suddenly developed a chill and then a convulsion. Physical examination: temperature 104.8 (R), the neck was not stiff. The active convulsion was over but the patient seemed semi-stuporous. Examination of the skin showed a few petechiae scattered about. Physical examination was otherwise essentially negative. The patient was sent into the Medical College of Virginia Hospital, where the initial attempt at a blood culture went awry. A lumbar puncture returned a clear fluid. The patient was started on sulfadiazine immediately after the puncture and was well and back home on the thirteenth. Laboratory report: a blood culture (obtained after treatment had started) remained sterile. No positive diagnosis was possible but a probable diagnosis of meningococcus septicemia seems justifiable. Blood counts were: RBC 4,400,000; WBC 23,700; hemoglobin 70 per cent; PMN 52 per cent; large lymphs 24 per cent; small lymphs 22 per cent; Türcks cells 2 per cent. Throat culture: negative for hemolytic streptococci and diphtheria. Subsequent dealings with this patient revealed that his health was better when orange juice was replaced entirely by ascorbic acid.

4. A. F. Fourteen months old. Wt. 22½ lbs.

February 10, 1944. The patient's past history was essentially negative except for several colds. He was unable to take orange juice because of vomiting and eruptions. He took ascorbic acid daily. He had slight cranio tabes when first seen at six months of age. Present illness—slight cough for two days, feverish the night before and would jump and cry out in his sleep. A rash was noted today. (An aunt had what was thought to be a mild measles two weeks previously.)

Physical examination: temperature 100.2 (R), a macular papular eruption was scattered generally over the skin. Suboccipital nodes were palpable. Eyes normal; ears, right, normal, left, slightly thick; slightly dull; apparently a collapsed blob; nose slightly congested. Pharnyx slightly granular, not red. No Koplik spots were present.

About 2 P. M. the patient had a chill and possibly a spasm; temperature shot up to 106 (R). Emergency treatments such as baths, aspirin, etc., were given. When seen at 7:00 P. M. the temperature was 102.4. The patient vomited when he sat up. The neck was not definitely stiff. No Kernig sign was present. The eruption noted in the morning had disappeared, but from fifteen to twenty small petechiae about one to two millimeters in diameter were found. The patient was started on sulfamerazine, 1¼ tablets (.5 gm.) and ½ tablet every eight hours, after blood had been taken for counts and culture.

February 11, 1944. Temperature 100 (R) but the neck was retracted and stiff. Kernig sign was negative. The rash was less noticeable.

February 12, 1944. No more vomiting but the patient was fretful during the night. His head was retracted and the neck was stiff. His knee jerks were slightly exaggerated. Kernig sign was negative. A lumbar puncture revealed a cloudy fluid under pressure. Sulfamerazine was stopped and sulfadiazine, about one grain per pound of body weight daily, was started.

February 13, 1944. The patient was much better. He stood up in his crib and played.

February 14, 1944. No more fever. The skin was clear. The reflexes were normal, and the patient seemed well.

The laboratory report was as follows: RBC 4,800,000; WBC 5,800; hemoglobin 78 per cent; juvenile 3 per cent; stab 32 per cent; segmented 16 per cent; lymphocytes 41 per cent; monocytes 3 per cent. Description of the smear: The red blood cells appeared microcytotic but were normal in shape and hemoglobin content. No immature red cells were

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seen. The white cells showed marked toxic degeneration. The blood culture was positive for meningococci. Spinal fluid examination: Cell count 679 cells per cu. mm. nearly all of which were granuloeytes. Stained smear showed gram-negative intracellular diplococci. Spinal fluid culture on chocolate agar under increased CO_2 tension showed meningococci. Spinal fluid sulfamerazine: 2:75 mgs. per 100 cc.

5. P. M. Three years and ten months old. This patient has been under my care since she was a few days old. The mother has vasomotor rhinitis and an older brother was found to be sensitive to numerous foods and inhalants when he was examined by an allergist. The patient had very active reflexes and an ankle clonus in infancy. She was also subject to seborrhoea and to various skin eruptions. Her temperature was found to be subnormal as a rule and for some time she was given thyroid (Armour), one-half grain daily, apparently with benefit. Sensitivity to orange juice was suspected on several occasions, but a clear cut clinical effect from elimination was not obtained.

February 16, 1944. The patient started the day with vomiting and fever of 102, after a restless night, apparently due to a very stuffy nose. She had had a head cold and stuffy nose for the preceding ten days but had had no fever and no loss of appetite. After the original vomiting spell the child had a hard chill which lasted about two hours. She vomited a second time and complained of sore throat and headache.

Physical examination revealed a temperature of 105 (R). The conjunctivae were slightly red and the nose was very stuffy. The pharnyx was clean and only slightly injected, but a few pin-point lesions were noted on the palate, apparently petechiae. The skin was clear. The heart, lungs, abdomen, and reflexes were about normal. A voided specimen of urine was clear and yellow.

Sulfadiazine, about one grain per pound of body weight daily, was prescribed, with directions to start immediately after blood culture and counts were taken.

February 17, 1944. Mother reported that the child's temperature fell to 99.8 (R) after a restless night. The patient had complained of headache and had vomited again during the preceding evening. Physical examination was essentially normal except for a slightly stuffy nose.

February 18, 1944. Mother reported that the child had had no more fever and was feeling fine. Dr. Richard C. Neale, however, reported that meningococci were found in the blood culture. The blood counts were as follows: RBC 4,479,000; WBC 15,500; hemoglobin 76 per cent; juvenile 2 per cent; stab 10 per cent; segmented 77 per cent; lymphocytes 11 per cent. Description of the smear: The red blood cells appeared normal in size, shape, and hemoglobin content. No immature red cells were seen. The white cells appeared normal.

COMMENT

Five cases of meningococcemia—three proved and two probable—were seen within a period of twelve months. Previously, all cases of meningococcic infection recognized by the writer had involved the meninges before they were diagnosed. In this series only one case developed a clinical meningitis, and he had received apparently an inadequate dose of sulfamerazine during the septicemic stage. An analysis of these brief reports shows that all of the children had preceding symptoms of a respiratory infection which seemed mild. The onset of the septicemia was abrupt, with high fever, chill or convulsion, and the children appeared seriously ill. One patient (A.F.) showed the prodromal, probably toxic rash, a few hours before the petechial eruption, which was discovered after the chill or convulsion. Only one patient (P.M.) failed to have the petechial eruption on the skin, and she had small petechiae on her palate. Her symptoms otherwise suggested the onset of a septicemia so definitely, a provisional diagnosis was made and treatment was started immediately after the blood was taken for culture.

This series of patients obviously is too small to permit drawing any conclusions. It is interesting to note, however, that all these patients presented evidence of a food allergy with at least four and possibly all five showing sensitivity to orange juice. Those same children also had had cranio tabes and the tendency to exaggerated deep reflexes, easy excitability and fright that so often seems to accompany sensitivity to orange. One child presented evidence of an old hemiplegia and slight convulsive seizures of the petit mal type, without a history of difficult or apparently traumatizing birth. Subsequent experiences suggested that the convulsions probably were allergic in origin. Whether or not children with the particular type of constitutional

make-up represented by these patients are especially susceptible to meningococcic infection can only be surmised from the evidence presented. Clinical experience has convinced me, however, that this type of child becomes less susceptible to acute infections after the offending foods have been eliminated from the diet and suitable substitutes, e.g., ascorbic acid for orange juice, have been provided.

The typical eruption of meningococcic septicemia is petechial in type, often small in size, and the lesions may be few in number so that a search of the entire body may be necessary to find them. The discovery of petechiae, however, shortly after the stormy onset of an illness, points the way to the diagnosis and to a very satisfactory treatment. Sulfadiazine, in doses approximately one grain per pound of body weight daily, is capable of curing meningococcemia within twenty-four hours and at this time seems to be the drug of choice.

1004 West Franklin Street.

New Method for Reducing Excretion of Penicillin Is Effective.

A method whereby the amount of penicillin required for effective treatment can be reduced or the concentration of the drug in the blood stream can be maintained and which had previously been tried successfully on dogs has been found satisfactory for human beings, Karl H. Beyer, M.D.; Harrison Flippin, M.D.; W. F. Verwey, D.Sc., and Roland Woodward, B.S., Glenolden, Pa. report in *The Journal of the American Medical Association* for December 16.

One of the disadvantages of penicillin treatment is the great rapidity with which the drug clears from the blood stream and appears in the urine. In the new method the penicillin, in a solution of sodium para-aminohippuric acid instead of in a glucose solution, is administered continuously into a vein. Para-aminohippuric acid is a member of a group of compounds which increase the excretion of urine.

The four investigators explain that when the compound is administered simultaneously with penicillin it competes with penicillin for the same excretory mechanism in the kidneys. By so doing the rate of elimination of penicillin by the kidneys is much reduced thereby slowing considerably the rate of fall of the concentration of penicillin in the blood stream. The original work was done on dogs.

"In view of the widespread interest in this research," the four men say, "and the implications of the possible therapeutic [treatment] efficacy of the combination, it was decided to obtain data on a few patients to determine whether the simultaneous administration of para-aminohippuric acid with penicillin did produce an elevated plasma concentration of the antibiotic agent. Such a program would also permit us to study the patients carefully for any untoward reactions to the therapy so that we might be able to call these effects to the attention of other investigators."

The tests were made on 9 patients. In every instance the administration of para-aminohippuric acid with penicillin caused at least a twofold increase in the plasma level of penicillin. The penicillin concentration was in direct relationship to the para-aminohippuric acid concentration. When the latter was highest the penicillin level was increased more than fivefold.

"The combination of penicillin and para-aminohippuric acid therapy," the investigators say, "cannot be said to have influenced deleteriously the physical condition, the blood picture or the illness of any of the patients. . . . ."

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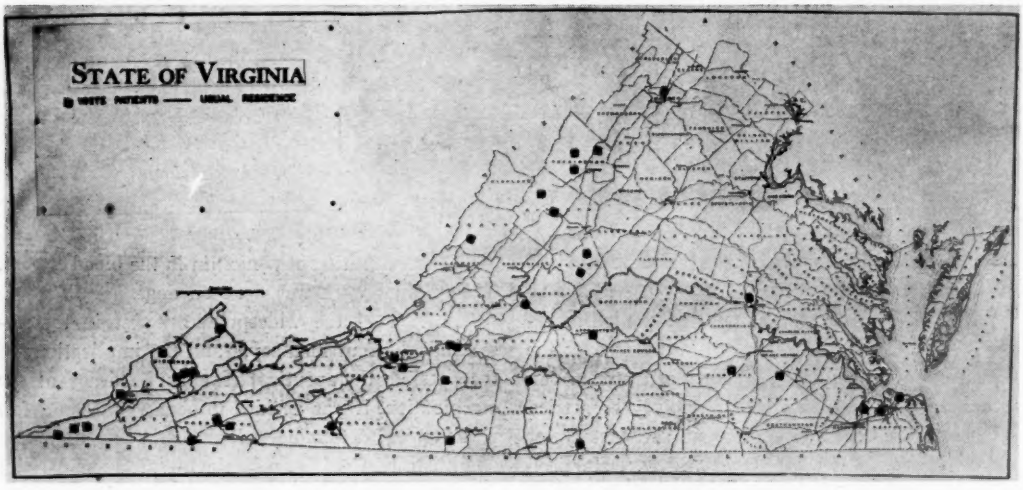
REPORT OF MATERNAL DEATHS

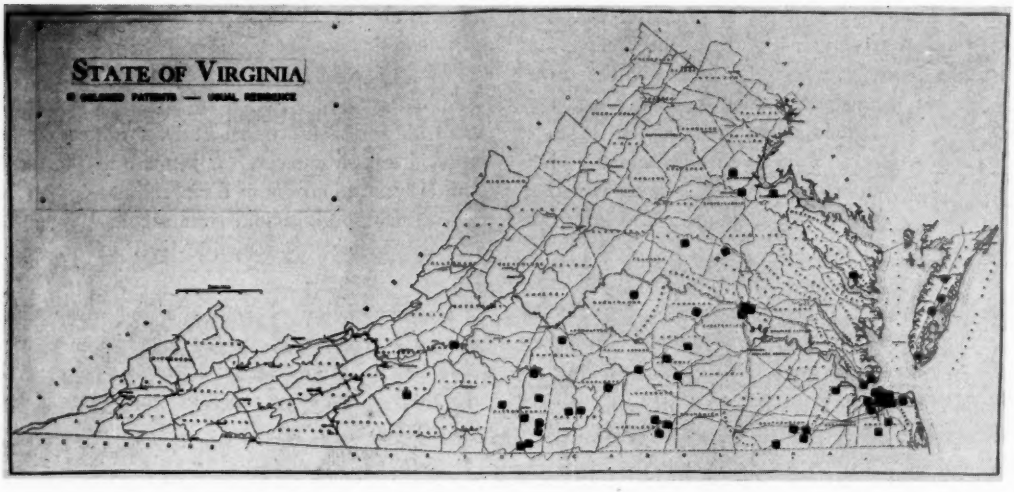
MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

Ninety-Three Deaths Due to Eclampsia.

A comparison of these maps with that shown in the December issue of the VIRGINIA MEDICAL MONTHLY will show a shift in concentration in that the deaths due to eclampsia among white patients is greater in the western half of the State. This may present a distorted picture when the incidence of eclampsia is not known. There were 39 white eclamptic patients and 54 colored in the 607 maternal deaths that occurred during the 2½ year period from December, 1939, to May, 1942.



Deaths due to this disease occurred 3.6 times more often in colored patients. The rate for white patients was .377; for colored 1.369. Approximately



one-fourth of the State's population is composed of negroes and these live chiefly in the southeastern portion.

Since the distribution of the cases of eclampsia is not known it cannot be stated that the disease occurs less often among white than colored patients in the southeastern area of the State. There is neither anything to show that the disease is more severe in colored patients in the eastern part of the State nor an explanation for the larger number of deaths occurring in white patients in the western part of the State.

The problem of prenatal care may be one of the answers to the fact that deaths continue to occur because of this disease. Thirty white and 48 colored patients were known to have had no prenatal care. The committee felt that 8 of the 15 patients who had prenatal care were not treated during the eclamptic period according to generally accepted procedures.

BOOK ANNOUNCEMENTS

Books received for review are promptly acknowledged in this column. In most cases reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

American Medical Practice in the Perspectives of a Century. By BERNHARD J. STERN, Ph.D., Lecturer in Sociology, Columbia University; Visiting Professor of Sociology, Yale University. New York. The Commonweatlh Fund. 1945. ix-156 pages. Cloth. Price $1.50.

Personal Mental Hygiene. By DOM THOMAS VERNER MOORE, O.S.B., M.D., Ph.D., Professor of Psychology and Psychiatry, Catholic University of America. Grune and Stratton. New York. 1944. 331 pages. Cloth. Price $4.00.

Taber's Dictionary of Gynecology and Obstetrics. By CLARENCE WILBUR TABER, Medical Editor and author of Taber's Cyclopedic Medical Dictionary, etc. With the collaboration of MARIO A. CASTALLO, M.D., F.A.C.S., Assistant Professor of Obstetrics, Jefferson Medical College; etc. Philadelphia. F. A. Davis Company. 1944. Over 700 pages. Cloth. Price $3.50.

Atlas of the Blood in Children. By KENNETH D. BLACKFAN, M.D., Late Thomas Morgan Rotch Professor of Pediatrics, Harvard Medical School; Late Physician-In-Chief, Infants' and Children's Hospitals, Boston. LOUIS K. DIAMOND, M.D., Assistant Professor of Pediatrics, Harvard Medical School; Visiting Physician and Hematologist, Infants' and Children's Hospitals, Boston. With Illustrations by C. MERRILL LEISTER, M.D., Associate Pediatrician, St. Luke's Hospital, Bethlehem and Allentown General Hospital, Allentown, Pa. The Commonwealth Fund. New York. 1944. xiv-320 pages. Cloth. Price $12.00.

Ventures in Science of a Country Surgeon. By ARTHUR E. HERTZLER, M.D. Halstead, Kansas. 1944. 304 pages. Illustrated. Cloth.

The author of "Horse and Buggy Doctor" here describes his experimental investigations in pathology and surgery, interspersed with anecdotes from his country practice, and philosophical discussions. His novel treatment of sciatica by injection of quinine-urea solution into the sciatic nerve does not appeal to a physiologist, in spite of the excellent clinical results he reports. Unfortunately, this book is not very interesting and has more typographic errors than should be found in a scientific work. The author takes many "cracks" at teachers of the basic medical sciences, such as for requiring memorization rather than thinking. This is of course true of any poor teacher, but he neglects to mention the typical mistakes of part time clinical teachers, who are so prone to confuse students by using proprietary names of drugs and antiquated terminology, and who too often know less of such subjects as endocrinology than the students whom they teach. The author's aim in encouraging practitioners to do experimental work is both praiseworthy and badly needed, but his rambling style will not encourage many people to read the book.

R. J. M.

Virus Diseases In Man, Animal and Plant. By GUSTAV SEIFFERT. A Survey and Reports Covering the Major Research Work Done During the Last Decade. (Translation by Marion Lee Taylor, Ph.D.) Philosophical Library, New York. 1944. 332 pages. Cloth. Price $5.00.

This book is a survey of the literature in virus research up to 1938. The bibliography is extensive, but heavily weighted with European references. The subject matter is well covered, but good correlation has not been achieved. It suffers from lack of judicious selection. The English translation is pedantic; transposition of words or meanings is not infrequent. Many "Germanisms" have been preserved. More thorough proof reading would have eliminated many mistakes in spelling and sentence structure. This book will serve as a useful reference, but cannot be favorably compared with recent American works on the same subject.

MORRIS A. BOWIE, MAJOR, M.C.,
Chief, General Medicine Section,
McGuire General Hospital, Richmond.

XUM

CORRESPONDENCE

German Measles as a Cause of Congenital Defects.

VITAL STATISTICS APPEAL TO THE PHYSICIANS OF VIRGINIA

TO THE EDITOR:

An editorial in the November number of the VIRGINIA MEDICAL MONTHLY reviews an unusual study made through an appropriation by the State of South Australia, on which Dr. Charles Swan and associates reported in full in the *Medical Journal of Australia* (Sydney) for September 11, 1943. This followed a previous report by Gregg, October, 1941, of 78 congenital cataracts, with few exceptions following German measles of the mother during the first two months of pregnancy. In 44 cases congenital heart lesion was also present.

Dr. Swan's study found that other congenital defects, such as club feet, deafness, microcephaly, and mental retardation, followed German measles of the mother during the early months of pregnancy. A few also followed mumps, true measles, influenza, and infections of the throat.

Heretofore heredity has been considered a principal cause of congenital deformity. This finding of rubella and other exanthema as a major cause of congenital defects suggests an opportunity in connection with the report of births, stillbirths, and deaths to determine whether a similar result can be found in Virginia. This study can be made by the Bureau of Vital Statistics through the birth certificates of children born with congenital defects.

Careful inquiry should be made of the mother of any history of German measles or other exanthema during the first two or three months of pregnancy. In some cases she may have observed only a slight eruption, no diagnosis having been made by a physician. Contact with these diseases or even their presence in the home or community may be recalled though she cannot recall symptoms of her own. All information obtainable can be put on the back of the certificate. Also secure any information possible as to whether other members of the family or forebears or blood relatives of either parent have had similar defects.

The Australian study seems to have included only living children which survived, but doubtless neonatal deaths and stillbirths may also be involved. The Bureau of Vital Statistics is now revising its yellow stillbirth form 83 and is including on it inquiries as to the presence of any exanthemata of the mother in stillbirth deformities.

Dr. Rones in the *Medical Annals of the District of Columbia* describes 4 cases of congenital cataract, 3 following German measles of the mother and 1 true measles.

To the Bureau of Vital Statistics this subject is appealing, and we trust that the physicians of Virginia will be interested in the study and report on every case of congenital defect, living or dead. A similar history may also be placed on the back of the death certificates of infants with congenital deformities.

This information will be considered confidential and if on the back of the certificate or on a separate sheet will not appear in any copies given out.

W. A. PLECKER, M.D.,
State Registrar, Bureau of Vital Statistics.

Keep the Mastery of Your Own Dollar.

Harrisonburg, Va., December 7, 1944.

TO THE EDITOR:

Is the recent election to be considered a mandate to weave into our economic fabric the various fixations of tax supported socialistic schemes which deprive individuals of all thought of themselves? I think not. Will the Social (In-)Security Act be our Roman Holiday, to complete chaos, and a repetition of the Dark Ages? I believe it will.

Availability, created by a payroll deduction, of all the medical and hospital care which one may think he needs will be surely curtailed by the costs of administration and expanding facilities. Both doctors and hospitals will be paid less and less. In spite of expanded coverage, facilities and so-called protection as baits, the citizen will be put on the list to await his turn for a bed as in Great Britain.

The writer in private practice served without charge for fourteen years with other doctors in a hospital dispensary for walking patients. The visits rose from 27,516 in 1929 to 62,757[1] in 1940, approximating population.

Doctor Goldwater reported a similar tendency in New York City. In 1920 out-patient visits were 2,782,283, and rose to 7,118,598 in 1936, also approximating population.

During the "Golden Decade" of the 1920's, hos-

pital admissions ranged upward to six millions—plus. In 1931 they rose to 7,155,976; in 1935 to 7,717,154, and doubled by 1943, totaling 15,374,-698.[2]

When the field of Medicine succumbs to the regulations of Social (In-)Security, it then becomes a free-for-all-scramble on the part of the taxpayer to get back something for something paid.

A two-year study in Socialized Medicine in the capacity of Health Officer and City Physician for a salary sheds some light on the subject. During the first year compensation averaged 22 cents for maternity operations, anaesthetics, minor surgery, fractures, vaccinations, house visits, office calls, hospital visits, etc. Courage to compile the statistics for the second year was lacking, but instead a letter of resignation was delivered.

Further studies in Socialized Medicine led the writer to serve the mine industry for more than a year. It would serve the War Effort, too. The offices of the mine doctors overflow with perfectly well people who get a look and a bottle; walking patients crowd the hospital dispensaries, and bed patients are discharged more or less prematurely to make room for other admissions. Night and day service to folks who needed no medical service in most cases failed to serve the War Effort, but did furnish previews of contributory and Federalized Medicine. Payroll deduction was $4.00 per month for medical and hospital services.

There is no such thing as *adequate* medical or hospital care. What is adequate for one is not for another, and differs with the same person at another time, with the same malady. Under any contributory system, whether a Municipal Tax System, a co-operative, an insurance, a special "Security" Tax, or any other pre-payment plan, adequate care increases actuarially from month to month and year to year.

As costs rise, premiums and taxes must rise, especially when payments to those who serve cannot be further reduced.

Sickness is present when spending is from one's own pocket, but not necessarily present when spending is from a pool of funds.

Is Medicine to be Federalized to furnish jobs for Bureaucrats? There were approximately 20 per cent more office holders in the German system than there were doctors in 1935.

ERNEST L. SHORE, M.D.

REFERENCES:

1. Atlantic City Hospital.
2. Letter from A. M. A.

Floral Eponym (23)

OPUNTIA BIGELOVII, ENGELM.

JOHN MILTON BIGELOW, 1804-1878

THE Golden Spined Jumping Cholla, or Teddy Bear Cactus, botanically known as Opuntia Bigelovii, grows best in the arid parts of the Southwest and in the hottest southern exposure of rocky foothills and slopes. It is densely covered with spines and is the most difficult to handle of all the cylindrical opuntias.

Little is known about Dr. Bigelow in medical circles. His name does not appear in the various cyclopedias of medical biography or in the biographical dictionaries of the public library. Dr. S. F. Blake, Senior Botanist of the U. S. Department of Agriculture, has kindly furnished us the following information concerning him: Dr. John Milton Bigelow was a physician in Ohio and a botanist of some note. He was on the Mexican Boundary Survey in the early fifties under Emory. A brief account of his life is given in a footnote in C. S. Sargeant's Silva of North America. A lengthy biographical sketch is to be found in the Ohio Archeological and Historical Quarterly (51:313, 1942). There is also considerable information about Bigelow in Andrew D. Rodgers' "John Torrey" (Princeton Press, 1942).

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PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for November, 1944, as compared with the same month in 1943, and for the period of January through November, 1944, compared with the same period in 1943, follows:

	Nov. 1944	Nov. 1943	Jan.-Nov. 1944	Jan.-Nov. 1943
Typhoid and Paratyphoid Fever	6	15	120	210
Diarrhea and Dysentery	243	258	6,046	5,428
Measles	22	853	17,073	10,518
Scarlet Fever	291	223	2,630	1,630
Diphtheria	58	49	294	362
Poliomyelitis	41	4	750	60
Meningitis	7	27	490	800
Undulant Fever	1	3	36	36
Rocky Mountain Spotted Fever	1	2	81	56
Tularemia	2	6	43	48

THE TEN LEADING CAUSES OF DEATH IN VIRGINIA

Ten causes of death accounted for more than three-fourths (77 per cent) of all deaths in Virginia in 1943. This fact is of some significance in medical and public health fields, as it suggests that the major problem of medical science, numerically at least, involves a comparatively small group of diseases and conditions.

The relative importance of different causes of death, however, varies greatly during the life-span. Certain diseases as leading causes in early childhood, such as diarrhea, enteritis, and whooping cough become relatively unimportant in later years. On the contrary, diseases of the heart, cancer, and nephritis—less important at the younger ages—become principal causes of death during adult and older age periods.

The table below shows the leading ten causes of death among all ages in the State according to rank in 1943 in comparison with the principal causes twenty years ago. It is noted that eight of the causes were the same in 1943 as in 1924. Relative rank during the two periods, however, varied somewhat with the exception of heart disease, which has continuously maintained first place.

Pneumonia-influenza and tuberculosis, occupying second and third positions twenty years ago, have dropped to sixth and seventh places in 1943. On the other hand, cerebral hemorrhage, nephritis and accidents in the fourth, fifth and sixth positions, respectively, in 1924, rose to second, third and fifth ranks last year. Cancer, in the seventh place in 1924 climbed to fourth position in 1943, whereas premature birth occupied eighth place during both decades. Two causes of death, diarrhea and puerperal causes, in ninth and tenth positions in 1924, dropped from the list of principal causes in 1943 and were replaced by diabetes and syphilis.

The marked reduction in deaths from the com-

THE LEADING TEN CAUSES OF DEATH IN VIRGINIA

1943			1924		
Causes of Death	Number	Per Cent	Causes of Death	Number	Per Cent
All Causes	28,707	100.0	All Causes	29,175	100.0
Heart disease	6,896	24.0	Heart disease	3,863	13.3
Cerebral hemorrhage	2,941	10.2	Pneumonia and influenza	3,030	10.4
Nephritis	2,478	8.6	Tuberculosis (all forms)	2,719	9.3
Cancer	2,363	8.2	Cerebral hemorrhage	2,630	9.0
Accidents (all types)	2,181	7.6	Nephritis	2,445	8.4
Pneumonia and influenza	2,063	7.2	Accidents (all types)	1,688	5.8
Tuberculosis (all forms)	1,397	4.9	Cancer	1,481	5.1
Premature birth	989	3.5	Premature birth	1,205	4.1
Diabetes	505	1.8	Diarrhea and Enteritis	964	3.3
Syphilis	376	1.3	Puerperal causes	419	1.4
All other causes	6,518	22.7	All other causes	8,731	29.9

municable causes resulting largely from advances in sanitation, immunization, and medical treatment is reflected in the lowered rank of pneumonia, influenza, tuberculosis, and diarrhea among the leading causes in recent years. The disappearance from the group of ranking causes of maternal mortality is noteworthy. On the contrary, deaths from the diseases of middle life and old age, cerebral hemorrhage, nephritis and cancer, have increased until they now hold the highest ranks successively, with the exception of heart disease. No accurate measure of rate increase for these causes, however, can be made which does not make allowance for the aging of the population. These gains are due, in part at least, to the larger relative proportion of persons in the older age groups.

WOMAN'S AUXILIARY
to the
MEDICAL SOCIETY OF VIRGINIA

*President*_____ MRS. PAUL C. PEARSON, Aylett
*President-Elect*_____ MRS. P. M. CHICHESTER, Abingdon
Recording Secretary _____ MRS. C. C. SMITH, Norfolk
Corresponding Secretary MRS. HAWES CAMPBELL, Turpin
*Treasurer*_____ MRS. REUBEN F. SIMMS, Richmond
Chairman, Press and Publicity MRS. A G. SHETTER, Richmond.

Norfolk Auxiliary.

Due to the inclement weather the regular fall meeting of the Woman's Auxiliary to the Norfolk County Medical Society was not held on November 20 but was postponed to December 4. However, an Executive Board meeting was held on the 20th.

At the December meeting, it was decided to sponsor a subscription supper party in January for the members of the Norfolk County Medical Society and all medical officers in the community, and a committee was appointed to carry out plans.

The organization accepted the recommendation of the Board that the spring meeting be followed by a luncheon, as in former years, a two-course luncheon to be held at Ames and Brownley.

The recommendation that the Auxiliary send Christmas Greetings to all former members of the Norfolk County Medical Society who are now serving with the armed forces, was also accepted. The President appointed Mrs. Charles Lupton to head a committee to do this.

Mrs. James Anderson, War Service Committee Chairman, reported that $18.00 had been sent from the Auxiliary to the Tidewater Camp and Hospital Association to be used in purchasing Christmas gifts for convalescent soldiers. Mrs. Southgate Leigh, the President, announced, for the Public Relations Chairman, Mrs. Brock Jones, Jr., that the Tea, tentatively set for January, had been postponed to February 7, at which time the committee had arranged to have a speaker on Rehabilitation of Soldiers.

The President announced that it had been suggested that the Archives of the Auxiliary be rearranged and revised. She appointed a committee to do this, consisting of Mrs. Rufus Kight, Historian (to be Chairman), Mrs. Franklin D. Wilson, and Mrs. William N. Harris.

Mrs. Brock Jones, Jr., War Service Chairman, had been approached on the subject of the Auxiliary sponsoring a Christmas Tree in one of the wards of convalescent service men. Specifically, this would mean that members help in trimming the tree and serving refreshments. It was decided to cooperate in this work through Mrs. Jones.

Richmond Auxiliary.

The regular monthly meeting of the Woman's Auxiliary to the Richmond Academy of Medicine was held at the Academy Building, November 17, with 12 members present.

Mrs. Andrew Shetter called the meeting to order and conducted the installation of the following officers: President, Mrs. B. B. Bagby, Jr.; vice-president, Mrs. P. N. Pastore; secretary, Mrs. G. S. Row; treasurer, Mrs. L. C. Brawner; and corresponding secretary, Mrs. A. F. Bagby.

Mrs. Brawner, the treasurer, reported credits of $2.00 in contribution and of $1.00 in dues and reported a check of $2.50 written for subscription to

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Hygeia Magazine to be sent to the local tuberculosis sanitorium. There is a bank balance of $130.19.

Mrs. Shetter read a letter from Dr. Haag, who expressed appreciation to the Auxiliary for the co-operation in making the meeting of the Medical Society of Virginia a success.

Plans were made for a luncheon at the December meeting. It was decided that a charge of $.25 be made for each luncheon. Members will exchange inexpensive amusing gifts.

Motion was made by Mrs. Welchons and seconded by Mrs. Pastore that the philanthropic work at the the Sheltering Arms Hospital be continued—carried.

Mrs. Pastore introduced the guest speaker, Mrs. Roland Main, who gave an enlightening talk on the work of the Children's Aide. She touched on the history of the work, and on other agencies in Richmond that work with children. She spoke in more detail on the work of the Children's Aide and presented several very interesting case histories.

EVELYN ROW, *Secretary.*

Northampton-Accomac Auxiliary.

The Woman's Auxiliary to the Northampton-Accomac Medical Societies held its regular quarterly meeting on November 7, at the home of Mrs. W. Carey Henderson, Nassawadox. Twenty-one members were present.

The business meeting included minutes of the April meeting, Treasurer's and Committee reports, and discussion of the Auxiliary's annual Christmas gift to the Northampton-Accomac Hospital. It was voted to give $75.00 for this.

The following officers were elected for 1945: President, Mrs. C. E. Critcher, New Church; vice-president and president-elect for 1946, Mrs. S. S. Kellam, Cape Charles; secretary, Mrs. W. L. Cosby, Painter; and treasurer, Mrs. W. J. Sturgis, Nassawadox.

Mrs. J. L. DeCormis gave an interesting account of the State Meeting in Richmond. The highlights of the meeting included an address by the Hon. Colgate W. Darden, Jr., Governor of Virginia, who gave a splendid talk on the State Health Program, and the plans for three yearly examinations of school children, which is to cost $3,000,000, stressing that the children of today are the men of tomorrow. At the luncheon for the Auxiliary, Mrs. Darden's slides of Wild Bird Life in technicolor were greatly enjoyed. The Auxiliary's Annual Report to the meeting was read by Mrs. DeCormis.

The retiring president, Mrs. W. Carey Henderson, thanked all chairmen and members for their cooperation and moral support, and turned the meeting over to the incoming president, Mrs. C. E. Critcher. Following this there was a pleasant social hour with refreshments.

The January meeting will be held at the home of Mrs. B. N. Mears at Belle Haven.

CATHERINE R. TROWER (MRS. HOLLAND),
Chairman, Press and Publicity.

Red Cross War Fund.

Keep your Red Cross at his side. Never was this more important than today. Long after swords have been beaten into plowshares the Red Cross will have much to do. Even after the last gun has been fired, many a month will pass before all our fighting men are home. Some will be confined in hospitals for long periods of recovery. Traditional Red Cross service for these men who have sacrificed so much must continue unabated. It is a sacred obligation delegated to your Red Cross.

No less sacred is the obligation to stand by with all necessary aid while veterans of this war, now being returned to civil life, adjust themselves to new conditions, prepare to take their rightful places in field and factory. The welfare of the families of our men in uniform, their wives and children, their aged parents, must be guarded to see they do not suffer want in these trying times. The refugees and waifs of war need help—help such as only the Red Cross is prepared to give in a war-scarred world.

Those essential and humanitarian services which at home have characterized the Red Cross through the years must be continued: disaster relief, home nursing instruction, nurse's aide training, the many volunteer services, and other activities.

Though the roar of guns may cease, human needs remain. The Red Cross can meet these only with your continued generous support. The President has designated March as Red Cross Month, the period in which the 1945 Red Cross War Fund will be raised. Red Cross activities are financed solely from voluntary contributions and gifts. We all must do our part.

VIRGINIA MEDICAL MONTHLY

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WYNDHAM B. BLANTON, M. D.,
Editor Emeritus

M. PIERCE RUCKER, M. D.,
Editor

AGNES V. EDWARDS
Business Manager

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E. M. I. C.

AT the second Emergency Maternity and Infant Care Conference the growth of the Plan was reviewed and some details of administration were discussed. The program as a nation-wide service was first made possible on March 18, 1943, when Congress voted a special appropriation of $1,200,000 to carry forward services that had been begun under the provisions of the Social Security Act I, Title V, Part I. In April, 1943, the program was established in thirteen States. By March, 1944, it was in operation in all forty-eight States, the District of Columbia, Alaska, Hawaii, and Puerto Rico. Ninety-one per cent of the total cases authorized are maternity cases and approximately 86 per cent of the maternity patients delivered have received hospital care. Some half a million deliveries a year are being paid for under the Plan. New cases are authorized at the rate of 43,000 a month. The plotted curve of new cases reached its peak in June, 1944. Since then there has been a leveling off with a slight decline in some months. The Plan was adopted in Virginia in July, 1943. Through September, 1944, 10,574 maternal and infant care cases have been authorized. There were 994 authorizations in September.

It was gratifying to note a disposition on the part of all members of the Conference to simplify the paper work of the doctor in every possible way. Physicians and officials of clinics participating in the program, whenever possible, must check the service man's present rank or rating and serial number. A letter, if franked, bears this information, or it may be obtained from the wife's allowance card or other official communications. Such evidence must bear a date not more than two months prior to the time of application for the service. A change in the husband's status after the date of the application does not affect the service. It was suggested that application for the infant's care be made at the time the wife applies for the maternity service. The

Children's Bureau will take this suggestion under advisement. Such things as special examination, basal metabolism, x-rays, etc., were discussed.

An unique development is the investigation of a federal bureau by a private agency. The University of Michigan School of Public Health has specialized in studying various health programs. When this $43,000,000 experiment, as Dr. Nathan Sinai described it, came into being, they could hardly keep their hands off. The Children's Bureau welcomed the opportunity of being studied, and the investigation has already started. After a survey of the office in Washington, field workers will go to various States; California, Nebraska, Illinois, New York, Massachusetts, Mississippi, and Georgia, to see how the Plan is actually working. When this study will be completed and where it will be reported, Dr. Sinai did not say. At any rate, it should be interesting.

The Council on Medical Service and Public Relations Casts Off Its Swaddling Clothes

THE Council on Medical Service and Public Relations is now eighteen months old and has begun to get about. The first regional conference with committees of the State Societies was held in Washington on December 6th. The participating States were New York, New Jersey, Delaware, Pennsylvania, Maryland and Virginia. On two preceding days the Council met with certain representatives of the Federal Government and Labor. The Chairman, Dr. John H. Fitzgibbon of Oregon, said that the C. I. O. had a fixed mind and wanted no conference. The A. F. of L. sent representatives who indicated that their union was not entirely sold on Federal plans for the distribution of medical care. Today's conference was with the State committees on medical service and Public Relations. Mr. J. W. Holloway, Jr., gave briefly the history of the formation of the Council on Medical Service and Public Relations. Dr. Joseph S. Lawrence outlined the program of the Washington office. Besides being a bureau of information on medical matters for the Congress and Federal departments, it planned to maintain a two-way news service on pending Federal legislation. It would keep the homefolks informed upon what was going on in Washington, and it wanted to know what the doctors back home thought on the same subjects. For instance, Dr. Lawrence said he had it from trustworthy sources that four modifications of the Wagner Bill would be presented in Congress early in February.

Lieutenant-Colonel Harold C. Lueth discussed the new Bureau of Information. Its function is threefold: 1. to make known to the doctors returning from the Armed Forces the available education facilities; 2. to give them the requirements of licensure in the various States; and, 3. to have available full information about population, medical and hospital facilities, living conditions, and climate of the various counties of the country that may be in need of doctors. In answer to a question, he said that only 4 per cent of the 11,000 questionnaires that had been analyzed from the doctors in the Armed Forces, indicated that they wanted a government job when they returned home.

Dr. Carl Peterson of the Council on Industrial Health discussed the tremendous problem of rehabilitation. From the general discussion that followed, it was evident Virginia is handling this problem more intelligently than most States.

The afternoon was devoted to discussing Voluntary Health Insurance schemes. It was evident at the start that the impression had gone abroad that the American Medical Association favored indemnity plans. This, the Chairman repudiated. When this fog was dissipated, the discussion waxed hot and interesting over the relative merits of the service plan and the indemnity plan, with some minor discussions on how close a tie-up, if any, there should be with the Blue Cross Hospital Plans. We gathered that in some places the Blue Cross Plans were beginning to run the hospitals in a manner that the local profession resented. However, the main discussion centered about medical service *vs.* indemnity with Dr. Norman M. Scott leading the medical service plan-ites, and officers of the Western New York plan, the indemnity forces. It soon became evident that the Western New York and the New Jersey Plans were actually furnishing the same service. In Western New York there was a "gentleman's agreement" that the doctors would accept the scheduled fee in full payment for the lower-income group, and in New Jersey it was a matter of contract. Certain interesting side-lights came out in the discussion. For instance, in one locality in Pennsylvania there was considerable opposition to any plan because there was no opportunity for fee splitting.

It would be a miracle if the Council on Medical Service and Public Relations solves all the problems that arise from trying to practice medicine in this over-complicated civilization we live in. But, if its members go around and find out what these problems are, and how they are being solved or partly solved here and there, they will soon be in a position to give invaluable counsel.

The Cancer Bulletin

AT the October, 1944, meeting of the Medical Society of Virginia, an appropriation was granted the Cancer Committee to prepare a series of bulletins on various phases of cancer treatment and diagnosis. The first bulletin appears in this issue of the MONTHLY. Copies have been mailed to the members of the Old Dominion Medical Society. Five more bulletins are planned during 1945.

The object is to provide the physicians of the State with a concise summary of practical facts about cancer, facts that are useful and applicable in everyday practice. The bulletins are being planned as a coordinated series. They will, therefore, be printed on a perforated sheet so that they can be detached and filed conveniently for ready reference in the office.

In these days of voluminous and numerous medical publications, it is difficult, if not impossible, for the busy physician to keep abreast of new developments, much less to find out which developments have been proved worthy of routine application. It is hoped that this bulletin will provide a useful digest on the subject of cancer, a disease which is an increasingly frequent problem in every doctor's practice and the cause of the second greatest number of deaths throughout the country.

XUM

PRESIDENT'S MESSAGE

Since the State meeting in October, the Medical Service Plan, approved by the House of Delegates, has made strides in its organization, as evidenced by the outline published in the December issue of the VIRGINIA MEDICAL MONTHLY. Soon it is hoped actual enrollment of clients will take place. Your cooperation in furthering this or similar plans and in taking part in their development will be a definite step forward in caring for individuals in the lower income brackets. I am sure that both the profession and the public will profit from such an undertaking.

Those of you who read the editorial written by Mr. W. E. Garnett, Ph.D., in the November MONTHLY must realize how pressing the problem of providing rural medical care and the distribution of doctors in country districts has become. Each issue of our Journal points up with sad emphasis in the obituary column the further depletion of physicians in these areas. Efforts are being made to study more intensely possible solutions of this problem and, the Governor's Advisory Legislative Council has appointed a sub-committee, on which your society is well represented, to study the matter. Every effort will be made to arrive at an adequate plan which will better the lot of the country doctor and at the same time offer the best that modern medicine has to give to the rural people. It seems evident now that this cannot be done without State and local aid. I will try to keep the profession advised of the developments from time to time of the progress being made by this committee.

On December 6 in Washington, D. C., a sectional meeting was held, comprising representatives of the medical profession from New York, New Jersey, Delaware, Pennsylvania, Maryland and Virginia, to discuss with the Council on Medical Service and Public Relations of the American Medical Association various pertinent phases of the medical care problem. At this meeting your society was represented by Drs. Riggin, Rucker and myself. The first part of the program was taken up with a discussion of the activities of this committee and the program to be followed by the Washington office of the American Medical Association, whose representative is Dr. Joseph S. Lawrence. During this discussion, it was brought out that several bills containing medical social legislation would probably be presented to the next Congress. This committee is attempting to contact groups, such as labor, who are instigating such legislation, to work in conjunction with them and to discuss various mutually interesting phases of medical care.

A discussion of the plan for education and distribution of returning medical officers was given by Dr. Harold C. Lueth, and this was followed by an address on rehabilitation of the returning veterans, both of which are pressing problems. It was pointed out that a large number of soldiers now being discharged, 45 per cent, have neuropsychiatric disorders and only a few of these received adequate post-service care.

The afternoon session was spent in a round-table discussion on voluntary insurance plans. I believe I am right in saying that the consensus of opinion seemed to be that the American Medical Association committee should advocate several pre-payment voluntary insurance plans for experimentation, and that this Public Relations Committee should provide progressive leadership for the medical profession.

Your Committee on Clinical and Medical Education held a meeting recently at which plans for discharged medical officers from the Army and Navy were discussed at some length. Information is now being asked for from hospitals, medical schools and industry within the State, with reference to possible further training and relocation of these officers. It is hoped by this means that we can be of some help on a State level.

If, at any time, any member of the Society has a problem or problems to present to the Society, it is hoped that he will not hesitate to call on your president.

H. B. MULHOLLAND.

News

Seaboard Medical Association.

At the annual meeting, held in Wilson, N. C., December 5-7, the following officers were elected: President, Dr. A. A. Burke, Norfolk; vice-presidents, Dr. R. L. Fike, Wilson, N. C.; Dr. R. Bryan Grinnan, Norfolk; Dr. John E. G. McLain, Sanatorium, N. C.; and Dr. Clayton W. Eley, Norfolk; and secretary-treasurer, Dr. Clarence Porter Jones (re-elected), Newport News.

The 50th Jubilee Annual meeting will be held at Virginia Beach, the latter part of 1945.

Promotions in the Service.

The following promotions for Virginia Doctors in the Army Medical Corps have been noted:

Dr. Walter Lewis Nalls, Richmond to Lieutenant-Colonel.

Dr. Clarence C. Chewning, Jr., Richmond to Captain.

Dr. William D. Chase, McLean to Captain.

Dr. Carrington Williams, Jr., Richmond to Captain.

Richmond Academy of Medicine.

At the annual meeting of the Academy in December, the following officers were elected: Dr. I. A. Bigger, president-elect; Drs. H. Hudnall Ware and Oscar L. Hite, vice-presidents; and Drs. Webster P. Barnes and Emily Gardner, members of the board of trustees for one year. These officers will be installed at the first meeting in January along with Dr. T. Dewey Davis who becomes president at that time.

The Wise County Medical Society

Met in Coeburn on December 8 with twenty-two members and several visitors in attendance. Drs. Joe Culbertson, S. H. Rivers and J. H. Hagy were hosts at the dinner, following which Dr. Hagy presented a paper on "The Connecting Link". This gave the origin and charter members of the society, dating back to 1901. A colored talkie movie on "Modern Nutrition", as prepared by E. R. Squibb, was then shown.

Dr. Glen Foster is president of this Society and Dr. W. B. Barton, secretary. Both are of Stonega.

Mental Hygiene Committee.

Dr. H. B. Mulholland, President of the Medical Society of Virginia, has appointed Dr. D. C. Wilson of the University of Virginia as chairman of this committee to succeed Dr. O. B. Darden who died recently. Dr. Frank H. Redwood, Norfolk, has also been named a member of the committee.

The Virginia Peninsula Academy of Medicine

Held its regular meeting on December 18 at Newport News, with the president, Dr. Frank A. Kearney, of Phoebus, presiding. Following a social hour and dinner, Dr. Edwin L. Kendig, Jr., Richmond, was the guest speaker, his topic being "Pathogenesis of Tuberculosis in Children". This was illustrated with lantern slides.

The Academy meets on the third Monday of each month at the Coca-Cola Recreation Hall. Dr. Robert H. Wright, Jr., Phoebus, is secretary-treasurer.

News from the University of Virginia, Department of Medicine.

The Eleventh Annual Post-Graduate Course in Ophthalmology and Otolaryngology, sponsored by the Virginia Society of Ophthalmology and Otolaryngology, was held at the Medical School of the University of Virginia for four days, December 5, 6, 7, and 8. Sixty-four physicians registered for the course. The following lecturers appeared on the program:

Dr. Frederick M. Law, New York City; Dr. Paul H. Holinger, Chicago; Dr. Russell L. Cecil, New York City; Dr. John R. Page, New York City; Dr. Joseph D. Kelly, New York City; Dr. McLemore Birdsong, University of Virginia; Dr. Marion Lawrence White, Jr., University of Virginia; Dr. James W. White, New York City; Dr. Wendell L. Hughes, New York City; Dr. William E. Fry, Philadelphia; and Dr. Paul A. Chandler, Boston, Mass.

Captain Alvin Swanson, United States Navy Medical Corps, was the chief speaker at the dinner held at the Farmington Country Club on the night of the 6th.

XUM

At the meeting of the University of Virginia Medical Society on Tuesday, December 5, Dr. Paul H. Holinger, Associate Professor of the Department of Otolaryngology, University of Illinois, gave an illustrated lecture on "Tumors of Bronchi".

Dr. McLemore Birdsong, Assistant Professor of Pediatrics, addressed the Augusta County Medical Society at their meeting on November 1. His subject was "Recent Advances in the Treatment of Purulent Meningitis". He also spoke to the staff of the Southside General Hospital in Farmville on the subject of "Meningitis".

Drs. Henry B. Mulholland, Robert V. Funsten, and Bruce C. Morton attended the meeting of the Richmond Academy of Medicine on November 28. Dr. Mulholland spoke on "The Problem of Rural Medical Care"; Dr. Funsten on "The effect of the Sister Kenny Publicity in the Treatment of Poliomyelitis"; and Dr. Morton on "Small Umbilical Hernias".

Medical College of Virginia News.

Dr. E. Trible Gatewood, professor of clinical otolaryngology, attended the annual meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago recently. Dr. Gatewood participated in the program with two lectures on Roentgen Ray Interpretation of Sinus Disease. Dr. Walter J. Rein, associate in ophthalmology, Dr. Luther C. Brawner, associate in ophthalmology, and Dr. Edgar Childrey, associate in ophthalmology, also attended the meeting.

Dr. Herbert C. Lee, assistant professor of surgery, has been elected a fellow in the American College of Surgeons.

Dr. Arden G. Howell, Jr., has been appointed professor of bacteriology and parasitology. Dr. Howell received his bachelor and master degrees in biology at the University of Richmond and his doctorate in biology at Harvard University. Prior to coming to the college he has been connected with the United States Public Health Service, Tulane University medical school, and the National Research Council.

Dr. Margaret DuBois has joined the staff of the college as director of its outpatient clinic, succeeding Dr. Fred J. Wampler, resigned. Dr. DuBois is a graduate of the University of Toronto school of medicine, later taking graduate work in hospital administration at the University of Chicago. She was three years with the American College of Surgeons engaged in a survey of hospitals. Dr. DuBois has also spent some time in private practice.

Among those attending the meeting of the Southern Surgical Association in Hot Springs recently were: Dr. C. C. Coleman, professor of neurosurgery; Dr. I. A. Bigger, professor of surgery; Dr. Carrington Williams, clinical professor of surgery; Dr. Everett I. Evans, associate professor of surgery. Dr. Evans gave a paper on the Treatment of Burns and Shock.

Dr. I. A. Bigger, professor of surgery, and Dr. Herbert C. Lee, assistant professor of surgery, took part in the post-graduate lecture series at the Regional Hospital at Camp Lee on November 17.

Dr. H. Hudnall Ware, Jr., professor of obstetrics, was recently elected chairman of the section on obstetrics of the Southern Medical Association.

Urology Award.

The American Urological Association offers an annual award "not to exceed $500" for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years. All interested should write the Secretary, for full particulars. The selected essay (or essays) will appear on the program of the forthcoming June meeting of the American Urological Association.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 15, 1945.

Dr. Horsley Honored.

At the annual meeting of the Medical Society of London on October 23, Dr. J. Shelton Horsley, Richmond, was unanimously elected a Corresponding Fellow. This Society is the oldest institution of its kind in England and possibly in the Empire. It was founded by John Coakley Lettsom in 1773.

Fellows of the American College of Surgeons.

The following initiates from Virginia were accepted into the fellowship of the College in 1944:

Dr. Wesley Fry, Alexandria.

Dr. Lyle J. Hansbrough, Front Royal.

Dr. William A. Johns, Richmond.

Dr. Herbert C. Lee, Richmond.

Dr. Leland R. O'Brian, Jr., Lynchburg

Dr. Samuel E. Oglesby, Lynchburg.

Dr. Milton Salasky, Norfolk.

Dr. Harry J. Warthen, Jr., Richmond.

Richmond Eye, Ear, Nose and Throat Society.

The regular meeting of this Society was held on November 28. Officers were elected as follows: President-Chairman, Dr. Luther Brawner; vice-chairman, Dr. DuPont Guerry, III; and secretary-treasurer, Dr. Clifford A. Folkes.

Dr. Karl Kundert presented a case report of Carcinoma of the Soft Palate and Both Tonsils, which was discussed by Dr. E. U. Wallerstein. Dr. E. T. Gatewood gave a report of the Academy meeting in Chicago from the otolaryngological aspect and Drs. Walter Rein, Edgar Childrey, Jr., and Luther Brawner from the ophthalmological aspect.

Medical and Surgical Symposium.

The second Annual Medical and Surgical Symposium, sponsored by the Watts Hospital Staff will be held at the Washington Duke Hotel, Durham, North Carolina, February 14-15. This particular symposium is given in celebration of the Fiftieth Anniversary of the founding of Watts Hospital. For further information, write Dr. W. W. Vaughan, Box 2172, Durham, N. C.

Dr. C. Howard Cain,

Recently located in Shelby, North Carolina, is now serving as resident physician in the H. F. Long Hospital, Statesville.

Dr. P. R. Fox,

Formerly of McComas, West Virginia, is now located at 2019 Monument Avenue, Richmond, where he is engaged in general practice. He is a graduate of the Medical College of Virginia in 1923.

Married.

Dr. Harold Goodman and Miss Harriett Lewis, both of Richmond, December 3. He is a graduate of the Medical College of Virginia, class of September, 1944.

Lt. Thomas Grasty Bell, MC., AUS., Staunton, and Miss Louisa Lile Tucker, formerly of Richmond, but now of Cleveland, December 24th. Lt. Bell is a graduate of the University of Virginia, Department of Medicine, in December 1943.

Dr. Oscar Swineford,

University of Virginia, Charlottesville, was elected president of the American Academy of Allergy at its annual meeting held in New York, December 11-12. Dr. John Warrick Thomas, Richmond, was elected a fellow, and Dr. W. Randolph Graham, also of Richmond, a member of the Academy at this meeting.

Capt. Hyman Cantor, M.C.,

Of Petersburg, is now on the Surgical Staff of the intestinal and septic surgery services of the 70th General Hospital, the affiliated unit of the St. Louis University Medical School.

Lt. Colonel Charles M. Caravati, M.C.,

Of Richmond, who has been on duty for sometime at the Percy Jones General Hospital, Battle Creek, Michigan, has been assigned to duty as chief of Medical Service at the Woodrow Wilson General Hospital in Staunton.

Petersburg Medical Faculty.

At the meeting in December, Dr. Henry M. Snead was elected president succeeding Dr. Edith Miller. Dr. William B. McIlwaine and Dr. George H. Reese were named vice-presidents, and Dr. Philip L. Hill was re-elected secretary-treasurer.

Dr. I. R. Wagner,

Who has been a member of the Medical Society of Virginia since 1906 when engaged in private practice in Virginia, retired the middle of October after twenty-seven years service in the Army, U. S. Public Health Service, and Veterans Administration, and is making his home in Charlottesville.

XUM

Dr. Walter J. Otis,

New Orleans, La., an alumnus of the Medical College of Virginia and member of the Medical Society of Virginia, has recently been re-appointed a member of the Committee on War Psychiatry, and also has been re-appointed Medical Superintendent of the De Paul Sanitarium of New Orleans, a hospital for neuro-psychiatric disorders.

Interesting Clipping.

Dr. Holcombe Robertson, Richmond, has sent the following clipping which he found in the advertising column of the CHRISTIAN OBSERVER, published in Louisville and Richmond, for October 28, 1874:

"Dr. Robert G. Cabell offers his professional services to the citizens of Richmond and its vicinity. Office 221 Governor Street, near Broad."

"Dr. John Knox, Residence 1010 East Broad Street, Richmond, Va. Messages left on the slate at the drug store of A. Scott, corner of Broad and twenty-fifth street, will receive prompt attention."

What a change in seventy years!

Fountain Pen Found.

Some one registering at the Richmond meeting of the Medical Society of Virginia left a fountain pen at the registration desk. Will be returned to owner upon request to this journal, 1200 East Clay Street, Richmond, 19.

For Sale.

One Luxor B. Alpine Lamp in good condition. Shenandoah Valley Bank, Winchester, Virginia. Executor of Estate of Dr. J. E. Harris, deceased. (*Adv.*)

Obituaries

Dr. Oscar Bruton Darden,

Well known Richmond physician, died December 10 following a heart attack. He was a native of North Carolina and fifty-three years of age. Dr. Darden graduated from the Medical College of Virginia in 1918, and, after serving an internship at Johnston-Willis Hospital, was associated with Dr. J. McCaw Tompkins in general practice. He had been a member of the medical staff of Westbrook Sanitarium since 1920. Dr. Darden was active in the work of his local and State medical organizations. He had been a member of the Medical Society of Virginia since 1924 and had recently been appointed chairman of its Mental Hygiene Committee. His wife and three sons survive him.

Dr. Robert J. Payne,

Prominent physician, died at his home in Stafford County on December 9. He was seventy-one years of age and a graduate of the former University College of Medicine, Richmond, in 1899. Dr. Payne was formerly a member of the Fredericksburg City Council and served as Mayor from 1932 to 1936. He was a Mason and a member of several other fraternal and civic organizations. Dr. Payne was a former president of the Fredericksburg Medical Association and had been a member of the Medical Society of Virginia for forty-five years. His wife, a daughter and two sons survive him.

Resolutions on Death of Dr. W. J. Knight.

At a meeting of the Riverside Hospital Staff, Newport News, the following resolutions were adopted:

Inasmuch as God, in His infinite wisdom and judgment, has seen fit to remove from our midst, our friend and colleague, Doctor W. J. Knight, therefore,

We Resolve that we have lost a very close friend, colleague, and adviser. He was one of the earliest physicians practicing under great difficulties in the early days of this City.

He was also one of the original founders of the present well established Riverside Hospital, and throughout its growth has taken a very keen interest in every activity for the betterment, not only of this Institution, but of the community as a whole.

He gave himself unreservedly in every activity of life.

BE IT RESOLVED that the Riverside Hospital Staff acknowledges its great loss in his passing, and offers to his widow and family its sincere and deep sympathy in their irreplaceable loss.

BE IT FURTHER RESOLVED that these resolutions be spread on the Minutes of this Body, and a copy be sent to the family, and the Medical Society of Virginia.

E. W. BUCKINGHAM, M.D., *Chairman*
J. H. MABRY, M.D.
O. T. AMORY, M.D.